BS AGRICULTURAL SCIENCE

Program Learning Objectives
1. Achieve a high degree of agricultural literacy.
2. Lead and direct individuals and groups in thought and action.
3. Analyze and communicate effectively the major issues in agriculture.
4. Demonstrate cultural competencies in an increasingly global agricultural industry and society.
5. Demonstrate critical thinking and problem solving skills.
6. Seamlessly and professionally integrate technology into practices.

Degree Requirements and Curriculum
In addition to the program requirements listed on this page, student must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation (http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext) section of this catalog, including:

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

Note: No Major or Support courses may be selected as credit/no credit.

MAJOR COURSES
AGED 102 Introduction to Agricultural Education 2
or AGC 102 Orientation to Agricultural Communication 2
AGED 404 Agricultural Leadership 3
AGED 410 Computer Applications in Agricultural Education 2
AGED 460 Research Methodology in Agricultural Education and Communication 1
AGED 461 Senior Project I 1
or AGC 461 Senior Project I 1
AGED 462 Senior Project II 1
or AGC 462 Senior Project II 1
AGED 463 Senior Project III 1
AGC 452 Current Trends and Issues in Agricultural Communication 4
or AG 360 Holistic Management 4
or AG 450 Applied Holistic Management 4
or AG 452 Issues Affecting California Agriculture 4

Foundation in Agriculture Courses
Agribusiness
AGB 202 Introduction to Sales 4
AGB 212 Agricultural Economics 4
AGB 301 Food and Fiber Marketing 4
or WVIT 343 Branded Wine Marketing

Animal Science
ASCI 112 Principles of Animal Science (B2) 1 4
Select from the following 8
ASCI 221 Introduction to Beef Production
ASCI 222 Systems of Swine Production

AG Systems Technology
BRAE 121 Agricultural Mechanics 2
BRAE 141 Agricultural Machinery Safety 3
BRAE 321 Agricultural Safety 3
BRAE 340 Irrigation Water Management (Upper-Division B) 1 4

Plant Science
AEPS 120 Principles of Horticulture and Crop Science 4
AEPS 190 California Vegetable Production 4
or AEPS 230 Environmental Horticulture
or AEPS 240 Commercial Seed Production
or AEPS 245 Horticultural Production Techniques

Natural Resources
NR/ES 308 Fire and Society (Upper-Division D) 1 4
or NR 323 Human Dimensions in Natural Resources Management

Safe Practices in Handling Food Products
DSCI 231 General Dairy Manufacturing 4
or FSN 230 Elements of Food Processing
FSN 275 Elements of Food Safety 4

Approved Electives in Emphasis Area
Select courses from the Guide to Approved Agricultural Electives - Emphasis Areas. At least 29 units in the combination of Approved Electives and Free Electives must be at the 300-400 level.

SUPPORT COURSES
Foundation Science and Mathematics
BOT 121 General Botany 4
or MCRO 221 Microbiology
or PHYS 121 College Physics I

CHEM 110 World of Chemistry (B1 & B3) 1 4
or CHEM 127 General Chemistry for Agriculture and Life Science I
MATH 118 Precalculus Algebra (B4) 1,2 4
or MATH 119 Precalculus Trigonometry
or MATH 141 Calculus I
or MATH 161 Calculus for the Life Sciences I
or MATH 221 Calculus for Business and Economics

GENERAL EDUCATION (GE)
(See GE program requirements below.) 48

FREE ELECTIVES
Free Electives 3 22
Total units 180

1 Required in Major or Support; also satisfies General Education (GE) requirement.
MATH 116 and MATH 117 substitute.

At least 29 units of Approved Electives and Free Electives must be at the 300-400 level. Students are encouraged to consult with the academic advisor in developing a plan for fulfilling degree requirements.

Guide to Approved Agricultural Electives - Emphasis Areas

Approved Agricultural Electives have been categorized by Emphasis Area to guide students. Advisor approval of Agricultural Electives is not required, but consultation with an advisor is recommended to ensure that the required number of upper-division units is met. Also, bear in mind that selection may impact pursuit of post-baccalaureate studies and/or goals. It is imperative for students seeking a teaching credential to select one Emphasis Area and adhere to the approved list of courses.

Emphasis Areas

Select Emphasis Area of choice: 24

Agricultural Engineering Technology
- BRAE 142 Agricultural Power and Machinery Management
- BRAE 150 Design Graphics and CAD for Agricultural Engineering
- BRAE 152 3-D Solids Modeling
- BRAE 240 Agricultural Engineering Laboratory
- BRAE 244 Precision Farming
- BRAE 333 Aquacultural Engineering
- BRAE 335 Internal Combustion Engines
- BRAE 337 Landscape Irrigation
- BRAE 348 Energy for a Sustainable Society
- BRAE 438 Drip/Micro Irrigation
- BRAE 481 Advanced Agricultural Mechanics
- BRAE 532 Water Wells and Pumps

Agribusiness
- AGB 214 Agribusiness Financial Accounting
- AGB 260 Agribusiness Data Literacy
- AGB 304 Innovation and Entrepreneurship in Agriculture
- AGB 309 Advanced Sales Techniques
- AGB 310 Agribusiness Credit and Finance
- AGB 312 Agricultural Policy
- AGB 313 Agriculture Economic Analysis
- AGB 314 Fair and Fair Facility Management
- AGB 322 Principles of Agribusiness Management
- AGB 323 Decision Making with Agribusiness Accounting Information
- AGB 369 Agricultural Personnel Management
- AGB 370 World Food Economy
- AGB 404 Food Retail Management
- AGB 440 Field Studies in Agribusiness
- AGB 445 Produce Marketing
- AGB 455 Advanced Fair Management Seminar

Animal Science
- ASCI 211 Meat Science
- ASCI 212 Livestock Show Management
- ASCI 220 Introductory Animal Nutrition and Feeding
- ASCI 221 Introduction to Beef Production
- ASCI 222 Systems of Swine Production
- ASCI 223 Systems of Small Ruminant Management
- ASCI 225 Introduction to Poultry Management
- ASCI 226 Livestock Evaluation
- ASCI 232 General Animal Science Laboratory
- ASCI 239 Principles of Rangeland Management
- ASCI 311 Advanced Beef Cattle System Management
- ASCI 321 Zoonoses and Veterinary Public Health Concerns
- ASCI 325 Egg Production, Processing and Distribution
- ASCI 330 Poultry Meat Production and Processing
- ASCI 342 Poultry Business Management
- ASCI 350 Nonruminant Nutrition
- ASCI 425 Meat Industry Study Tour
- DSCI 230 General Dairy Husbandry
- DSCI 241 Dairy Cattle Selection, Breeds, Fitting and Showing
- DSCI 301 Dairy Cattle Nutrition
- DSCI 330 Artificial Insemination and Embryo Biotechnology
- DSCI 333 Dairy Animal Health, Safety and Applied Technology

Crop and Soil Science
- AEPS 150 Forage Crops
- AEPS 190 California Vegetable Production
- AEPS 240 Commercial Seed Production
- AEPS 245 Horticultural Production Techniques
- AEPS 321 Weed Biology and Management
- AEPS 355 Citrus and Avocado Fruit Production
- AEPS 421 Postharvest Technology of Horticultural Crops
- AEPS 423 Advanced Vegetable Science
- SS 221 Soil Health and Plant Nutrition
- SS 322 Soil Plant Relationships
- SS 444 Soil Judging

Forestry and Natural Resources
- BIO 227 Wildlife Conservation Biology
- NR 142 Environmental Management
- NR 208 Dendrology
- NR 306 Natural Resource Ecology and Habitat Management
- NR/ES 308 Fire and Society
- NR 312 Technology of Wildland Fire Management
General Education (GE) Requirements

- 72 units required, 24 of which are specified in Major and/or Support.
- If any of the remaining 48 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 (http://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).

<table>
<thead>
<tr>
<th>Area A</th>
<th>English Language Communication and Critical Thinking</th>
</tr>
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<tbody>
<tr>
<td>A1</td>
<td>Oral Communication</td>
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<tr>
<td>A2</td>
<td>Written Communication</td>
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<tr>
<td>A3</td>
<td>Critical Thinking</td>
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<thead>
<tr>
<th>Area B</th>
<th>Scientific Inquiry and Quantitative Reasoning</th>
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<tbody>
<tr>
<td>B1</td>
<td>Physical Science (4 units in Support)</td>
</tr>
<tr>
<td>B2</td>
<td>Life Science (4 units in Major) 1</td>
</tr>
<tr>
<td>B3</td>
<td>One lab taken with either a B1 or B2 course</td>
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<tr>
<td>B4</td>
<td>Mathematics/Quantitative Reasoning (4 units in Support) 1</td>
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Upper-Division B (4 units in Major) 1 0

<table>
<thead>
<tr>
<th>Area C</th>
<th>Arts and Humanities</th>
</tr>
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Lower-division courses in Area C must come from three different subject prefixes.

<table>
<thead>
<tr>
<th>C1</th>
<th>Arts: Arts, Cinema, Dance, Music, Theater</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>Humanities: Literature, Philosophy, Languages other than English</td>
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Lower-Division C Elective - Select a course from either C1 or C2 4

Upper-Division C 4

<table>
<thead>
<tr>
<th>Area D</th>
<th>Social Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>American Institutions (Title 5, Section 40404 Requirement)</td>
</tr>
<tr>
<td>D2</td>
<td>Lower-Division D - Select courses from two different subject prefixes.</td>
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</tbody>
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Upper-Division D (4 units in Major) 1 0

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<thead>
<tr>
<th>Area E</th>
<th>Lifelong Learning and Self-Development</th>
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Lower-Division E 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 Major plus 4 units in GE) 1 4

Total units 48

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