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 (https://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
AGC 102 Orientation to Agricultural Communication & Agricultural Science 2
AGC 404 Foundations of Agricultural Leadership 3
AGC 452 Current Trends and Issues in Agricultural Communication 4
AGC 452 or AG 360 or AG 452 Holistic Management or Issues Affecting California Agriculture
AGC 463 Senior Project 3
AGED 410 Computer Applications in Agricultural Education 2-4
AGED 410 or AGC 314 California Fairgrounds and Expositions

Foundation in Agriculture Courses

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

Animal Science
ASCI 112 Principles of Animal Science (B2) 1 4
ASCI 112 or ASCI 221 or ASCI 223 or ASCI 224 or ASCI 225 or DSCI 230
Select from the following 8
ASCI 221 Introduction to Beef Production
ASCI 222 Systems of Swine Production
ASCI 223 Systems of Small Ruminant Management
ASCI 224 Equine Science
ASCI 225 Introduction to Poultry Management
DSCI 230 General Dairy Husbandry

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

Plant Science
PLSC 120 Principles of Horticulture and Crop Science 4
PLSC 190 California Vegetable Production
or PLSC 230 Environmental Horticulture
or PLSC 240 Commercial Seed Production
or PLSC 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 229 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
BOT 121 or MCRO 221 or PHYS 121
CHEM 110 World of Chemistry (B1 & B3) 1 4
CHEM 110 or CHEM 127
MATH 118 Precalculus Algebra (B4) 1 2 4
MATH 118 or MATH 119 or MATH 141 or MATH 161 or MATH 221

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.
2. 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: 22-24

### Agricultural Engineering Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAE 142</td>
<td>Agricultural Power and Machinery Management</td>
</tr>
<tr>
<td>BRAE 150</td>
<td>Design Graphics and CAD for Agricultural Engineering</td>
</tr>
<tr>
<td>BRAE 152</td>
<td>3-D Solids Modeling</td>
</tr>
<tr>
<td>BRAE 240</td>
<td>Agricultural Engineering Laboratory</td>
</tr>
<tr>
<td>BRAE 244</td>
<td>Precision Farming</td>
</tr>
<tr>
<td>BRAE 333</td>
<td>Aquacultural Engineering</td>
</tr>
<tr>
<td>BRAE 335</td>
<td>Internal Combustion Engines</td>
</tr>
<tr>
<td>BRAE 337</td>
<td>Landscape Irrigation</td>
</tr>
<tr>
<td>BRAE 348</td>
<td>Energy for a Sustainable Society</td>
</tr>
<tr>
<td>BRAE 438</td>
<td>Drip/Micro Irrigation</td>
</tr>
<tr>
<td>BRAE 440</td>
<td>Agricultural Irrigation Systems</td>
</tr>
<tr>
<td>BRAE 481</td>
<td>Advanced Agricultural Mechanics</td>
</tr>
</tbody>
</table>

### Agribusiness

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>AGB 214</td>
<td>Agribusiness Financial Accounting</td>
</tr>
<tr>
<td>AGB 260</td>
<td>Agribusiness Data Literacy</td>
</tr>
<tr>
<td>AGB 304</td>
<td>Innovation and Entrepreneurship in Agriculture</td>
</tr>
<tr>
<td>AGB 309</td>
<td>Advanced Sales Techniques</td>
</tr>
<tr>
<td>AGB 310</td>
<td>Agribusiness Credit and Finance</td>
</tr>
<tr>
<td>AGB 312</td>
<td>Agricultural Policy</td>
</tr>
<tr>
<td>AGB 313</td>
<td>Agriculture Economic Analysis</td>
</tr>
<tr>
<td>AGB 322</td>
<td>Principles of Agribusiness Management</td>
</tr>
<tr>
<td>AGB 323</td>
<td>Decision Making with Agribusiness Accounting Information</td>
</tr>
<tr>
<td>AGB 369</td>
<td>Agricultural Personnel Management</td>
</tr>
<tr>
<td>AGB 370</td>
<td>World Food Economy</td>
</tr>
<tr>
<td>AGB 404</td>
<td>Food Retail Management</td>
</tr>
<tr>
<td>AGB 440</td>
<td>Field Studies in Agribusiness</td>
</tr>
<tr>
<td>AGB 445</td>
<td>Produce Marketing</td>
</tr>
<tr>
<td>AGC 314</td>
<td>California Fairgrounds and Expositions</td>
</tr>
<tr>
<td>AGC 318</td>
<td>Fairgrounds and Facility Management</td>
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</tbody>
</table>

### Animal Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ASCI 211</td>
<td>Meat Science</td>
</tr>
<tr>
<td>ASCI 212</td>
<td>Livestock Show Management</td>
</tr>
<tr>
<td>ASCI 220</td>
<td>Introductory Animal Nutrition and Feeding</td>
</tr>
<tr>
<td>ASCI 221</td>
<td>Introduction to Beef Production</td>
</tr>
<tr>
<td>ASCI 222</td>
<td>Systems of Swine Production</td>
</tr>
<tr>
<td>ASCI 223</td>
<td>Systems of Small Ruminant Management</td>
</tr>
<tr>
<td>ASCI 225</td>
<td>Introduction to Poultry Management</td>
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<tr>
<td>ASCI 226</td>
<td>Livestock Evaluation</td>
</tr>
<tr>
<td>ASCI 232</td>
<td>General Animal Science Laboratory</td>
</tr>
<tr>
<td>ASCI 239</td>
<td>Principles of Rangeland Laboratory</td>
</tr>
<tr>
<td>ASCI 311</td>
<td>Advanced Beef Cattle System Management</td>
</tr>
<tr>
<td>ASCI 321</td>
<td>Zoonoses and Veterinary Public Health Concerns</td>
</tr>
<tr>
<td>ASCI 325</td>
<td>Egg Production, Processing and Distribution</td>
</tr>
<tr>
<td>ASCI 330</td>
<td>Poultry Meat Production and Processing</td>
</tr>
<tr>
<td>ASCI 342</td>
<td>Poultry Business Management</td>
</tr>
<tr>
<td>ASCI 350</td>
<td>Nonruminant Nutrition</td>
</tr>
<tr>
<td>ASCI 425</td>
<td>Meat Industry Study Tour</td>
</tr>
<tr>
<td>DSCI 230</td>
<td>General Dairy Husbandry</td>
</tr>
<tr>
<td>DSCI 241</td>
<td>Dairy Cattle Selection, Breeds, Fitting and Showing</td>
</tr>
<tr>
<td>DSCI 301</td>
<td>Dairy Cattle Nutrition</td>
</tr>
<tr>
<td>DSCI 312</td>
<td>Lactation Physiology</td>
</tr>
<tr>
<td>DSCI 330</td>
<td>Artificial Insemination and Embryo Biotechnology</td>
</tr>
<tr>
<td>DSCI 333</td>
<td>Dairy Animal Health, Safety and Applied Technology</td>
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</tbody>
</table>

### Crop and Soil Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLSC 150</td>
<td>Forage Crops</td>
</tr>
<tr>
<td>PLSC 190</td>
<td>California Vegetable Production</td>
</tr>
<tr>
<td>PLSC 240</td>
<td>Commercial Seed Production</td>
</tr>
<tr>
<td>PLSC 245</td>
<td>Horticultural Production Techniques</td>
</tr>
<tr>
<td>PLSC 313</td>
<td>Agricultural Entomology</td>
</tr>
<tr>
<td>PLSC 321</td>
<td>Weed Biology and Management</td>
</tr>
<tr>
<td>PLSC 323</td>
<td>Plant Pathology</td>
</tr>
<tr>
<td>PLSC 327</td>
<td>Vertebrate Pest Management</td>
</tr>
<tr>
<td>PLSC 329</td>
<td>Plants, Biotechnology, and the Media</td>
</tr>
<tr>
<td>PLSC 355</td>
<td>Citrus and Avocado Fruit Production</td>
</tr>
<tr>
<td>PLSC 406</td>
<td>Advanced Weed Management</td>
</tr>
<tr>
<td>PLSC 421</td>
<td>Postharvest Technology of Horticultural Crops</td>
</tr>
<tr>
<td>SS 221</td>
<td>Soil Health and Plant Nutrition</td>
</tr>
<tr>
<td>SS 322</td>
<td>Soil Plant Relationships</td>
</tr>
</tbody>
</table>
### 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 (https://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).

#### Area A

<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>
</tr>
<tr>
<td>A2</td>
<td>Written Communication</td>
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<tr>
<td>A3</td>
<td>Critical Thinking</td>
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</tbody>
</table>

#### Area B

<table>
<thead>
<tr>
<th>Area B</th>
<th>Scientific Inquiry and Quantitative Reasoning</th>
</tr>
</thead>
<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)</td>
</tr>
<tr>
<td>B3</td>
<td>One lab taken with either a B1 or B2 course</td>
</tr>
<tr>
<td>B4</td>
<td>Mathematics/Quantitative Reasoning (4 units in Support)</td>
</tr>
</tbody>
</table>

#### Area C

<table>
<thead>
<tr>
<th>Area C</th>
<th>Arts and Humanities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower-Division C Elective - Select a course from either C1 or C2</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Area D

<table>
<thead>
<tr>
<th>Area D</th>
<th>Social Sciences - Select courses in Area D from at least two different prefixes</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</td>
</tr>
<tr>
<td>Upper-Division D (4 units in Major)</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Area E

<table>
<thead>
<tr>
<th>Area E</th>
<th>Lifelong Learning and Self-Development</th>
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</table>

<table>
<thead>
<tr>
<th>Lower-Division E</th>
<th>Ethic Studies</th>
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<tbody>
<tr>
<td>F</td>
<td>Ethnic Studies</td>
</tr>
</tbody>
</table>

#### 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) | 4 |

**Total units** | 48

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