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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGED 102</td>
<td>Introduction to Agricultural Education</td>
<td>2</td>
</tr>
<tr>
<td>AGED 404</td>
<td>Agricultural Leadership</td>
<td>3</td>
</tr>
<tr>
<td>AGED 410</td>
<td>Computer Applications in Agricultural Education</td>
<td>2</td>
</tr>
<tr>
<td>AGED 460</td>
<td>Research Methodology in Agricultural Education and Communication</td>
<td>1</td>
</tr>
<tr>
<td>AGED 461</td>
<td>Senior Project I</td>
<td>1</td>
</tr>
<tr>
<td>AGED 462</td>
<td>Senior Project II</td>
<td>1</td>
</tr>
<tr>
<td>AGC 452</td>
<td>Current Trends and Issues in Agricultural Communication</td>
<td>4</td>
</tr>
<tr>
<td>AGC 461</td>
<td>Senior Project I</td>
<td>1</td>
</tr>
<tr>
<td>AGC 462</td>
<td>Senior Project II</td>
<td>1</td>
</tr>
</tbody>
</table>

### SUPPORT COURSES

- **Botany and Microbiology**
  - BOT 121 General Botany 4
  - MCRO 221 Microbiology 4
- **Chemistry**
  - CHEM 121 World of Chemistry (B3 & B4) 4
  - CHEM 127 General Chemistry for Agriculture and Life Science I 4
- **Mathematics**
  - MATH 118 Precalculus Algebra I 4
  - MATH 119 Precalculus Trigonometry 4
  - MATH 141 Calculus I 4
  - MATH 161 Calculus for the Life Sciences I 4
  - MATH 221 Calculus for Business and Economics 4

### GENERAL EDUCATION (GE)
(See GE program requirements below.) 52

### FREE ELECTIVES

Free Electives 18

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

Total units 180
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
- NR/LA 317: The World of Spatial Data and Geographic Information Technology
- NR 321: Water Systems Technology, Issues and Impacts
- NR 323: Human Dimensions in Natural Resources Management
- NR/ES 360: Ethnicity and the Land
BS Agricultural Science

NR 402 Forest Health
NR/CRP 404 Environmental Law
NR/CRP 408 Water Resource Law and Policy

Ornamental Horticulture
BOT 121 General Botany
AEPS 123 Landscape Installation and Maintenance
AEPS 124 Plant Propagation
AEPS 301 Principles of Landscape Design
AEPS 341 Cut Flower Production
AEPS 342 Potted Plant Production
AEPS 343 Turfgrass Management
AEPS 381 Native Plants for California Landscapes
AEPS 424 Nursery Crop Production
AEPS 432 Specialized Operations for Golf Courses and Athletic Fields
AEPS 437 Park and Public Space Management
BRAE 337 Landscape Irrigation

1 Required in Major or Support; also satisfies GE.
2 MATH 116 and MATH 117 substitute.

General Education (GE) Requirements

- 72 units required, 20 of which are specified in Major and/or Support.
- See the complete GE course listing (http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext).
- Minimum of 12 units required at the 300 level.

<table>
<thead>
<tr>
<th>Area A</th>
<th>Communication</th>
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<tbody>
<tr>
<td>A1</td>
<td>Expository Writing</td>
</tr>
<tr>
<td>A2</td>
<td>Oral Communication</td>
</tr>
<tr>
<td>A3</td>
<td>Reasoning, Argumentation and Writing</td>
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<thead>
<tr>
<th>Area B</th>
<th>Math, Science, and Quantitative Reasoning</th>
</tr>
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<tbody>
<tr>
<td>B1</td>
<td>Mathematics/Statistics (4 units in Support plus 4 units in GE) 1</td>
</tr>
<tr>
<td>B2</td>
<td>Life Science (4 units in Major) 1</td>
</tr>
<tr>
<td>B3</td>
<td>Physical Science (4 units in Support) 1</td>
</tr>
<tr>
<td>B4</td>
<td>One lab taken with either a B2 or B3 course</td>
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<tr>
<td>B7</td>
<td>Upper-division elective (4 units in Support) 1</td>
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<thead>
<tr>
<th>Area C</th>
<th>Arts and Humanities</th>
</tr>
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<tbody>
<tr>
<td>C1</td>
<td>Literature</td>
</tr>
<tr>
<td>C2</td>
<td>Philosophy</td>
</tr>
<tr>
<td>C3</td>
<td>Fine/Performing Arts</td>
</tr>
<tr>
<td>C4</td>
<td>Upper-division elective</td>
</tr>
<tr>
<td>Area C elective</td>
<td>Choose one course from C1-C5</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Area D</th>
<th>Society and the Individual</th>
</tr>
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<tbody>
<tr>
<td>D1</td>
<td>The American Experience (Title 5, Section 40404 requirement)</td>
</tr>
<tr>
<td>D2</td>
<td>Political Economy</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Area E</th>
<th>Lifelong Learning and Self-Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Lower-division elective</td>
</tr>
</tbody>
</table>

Total units 52

1 Required in Major or Support; also satisfies GE.