BS AGRICULTURAL SCIENCE

Program Learning Objectives

1. Possess the well-rounded subject matter breadth and depth required to effectively teach subject matter in agriculture.
2. Professionally communicate and articulate knowledge to others in multi modal, succinct and creative teaching styles.
3. Lead and direct individuals and groups in thought and action.
4. Analyze and communicate effectively about major issues in agriculture.
5. Demonstrate cultural competencies in an increasingly global agricultural industry and society.
6. Develop a high degree of agricultural literacy.
7. Demonstrate critical thinking and problem solving skills.
8. Seamlessly and professionally integrate technology into instructional 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
AGC 452 Current Trends and Issues in Agricultural Communication 4
or AG 360 Holistic Management 3
or AG 450 Applied Holistic Management 3
or AG 452 Issues Affecting California Agriculture 3
AEPS 120 Principles of Horticulture and Crop Science 4
or AEPS 230 Environmental Horticulture 4
AGB 202 Introduction to Sales 4
AGB 212 Agricultural Economics 4
AGB 301 Food and Fiber Marketing 4
Select one from the following: 4

SUPPORT COURSES

BRAE 340 Irrigation Water Management (Area F) 4
CHEM 110 World of Chemistry (B3 & B4) 4-5
or CHEM 111 Survey of Chemistry 4-5
MATH 118 Precalculus Algebra (B1) 2 4
or MATH 119 Precalculus Trigonometry 4
NR/ES 308 Fire and Society (D5) 4
or NR 323 Human Dimensions in Natural Resources Management 4
Approved Electives in Emphasis Area (12-20 units must be at the 300-400 level; see Approved Electives Guide below) 24

Approved Electives in Career Area 28

Select either the Individualized or Teaching Agriculture career area:

Individualized

Any course with a prefix in AEPS, AG, AGC, AGED, AGB, ASCI, BRAE, DSCI, ERSC, FSN, NR, RPTA, SS, WVIT, COMS, GRC, JOUR (that is not already counting towards GE area), or any courses included as a required course within a minor at Cal Poly. 12 to 20 units must be at the 300-400 level depending on emphasis area.

Teaching Agriculture

AGB 214 Agribusiness Financial Accounting
or BUS 212 Financial Accounting for Nonbusiness Majors
AGED 303 FFA and Supervised Agricultural Experience
AGED 350 Early Field Experience in Agriculture Education

Teaching Agriculture Electives

Restriction: no more than 8 units total of BIO, BOT, CHEM, GEOL, MCRO, MSCI, PHYS can count towards Teaching Agriculture Electives. 5

Select 4 units from the following:

Any Lower Division or Upper Division course with a prefix in AEPS, AG, AGB, ASCI, BIO, BOT, BRAE, CHEM, DSCI, ERSC, FSN, GEOL, MCRO, MSCI, NR, PHYS, RPTA, SS, WVIT, or

AGED 220 Agricultural Youth Conferences
BUS 207 Legal Responsibilities of Business
ECON 222 Macroeconomics

AEPS 150 Forage Crops
AEPS 190 California Vegetable Production
AEPS 250 California Fruit Growing
AEPS 260 Introduction to Vegetable Science
ASCI 112 Principles of Animal Science (B2) 4
ASCI 225 Introduction to Poultry Management 4
BRAE 121 Agricultural Mechanics 2
BRAE 141 Agricultural Machinery Safety 3
DSCI 230 General Dairy Husbandry 4
DSCI 231 General Dairy Manufacturing 4
or FSN 230 Elements of Food Processing 4
SS 121 Introductory Soil Science 4
or SS 131 Soils in Environmental and Agricultural Systems 4
Approved Electives in Emphasis Area (12-20 units must be at the 300-400 level; see Approved Electives Guide below) 24

Approved Electives in Career Area 28

Select either the Individualized or Teaching Agriculture career area:
Approved Electives Guide

Approved electives have been categorized by emphasis area to guide students in their selections. Advisor approval of 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 (12 to 20 units must be at the 300-400 level):

Agricultural Engineering Technology

Core Courses:
- BRAE 133 Introduction to Engineering Design Graphics
- BRAE 237 Introduction to Engineering Surveying
- or BRAE 239 Engineering Surveying
- BRAE 321 Agricultural Safety
- BRAE 335 Internal Combustion Engines

Select from the following electives:
- BRAE 142 Agricultural Power and Machinery Management
- BRAE 151 CAD for Agricultural Engineering
- BRAE 152 3-D Solids Modeling
- BRAE 240 Agricultural Engineering Laboratory
- BRAE 331 Irrigation Theory
- 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
- PHYS 121 College Physics I

Agricultural Supplies and Services

Core Courses:
- AGB 214 Agribusiness Financial Accounting
- AGB 309 Advanced Sales Techniques
- AGB 310 Agribusiness Credit and Finance

Select from the following electives:
- AGB 260 Agribusiness Data Literacy
- AGB 312 Agricultural Policy
- AGB 313 Agriculture Economic Analysis
- AGB 314 Fair and Fair Facility Management
- AGB 322 Principles of Agribusiness Management
- AGB 323 Agribusiness Managerial Accounting
- AGB 331 Farm Accounting
- AGB 369 Agricultural Personnel Management
- AGB 404 Food Retail Management
- AGB 440 Field Studies in Agribusiness
- AGB 445 Produce Marketing
- AGB 455 Advanced Fair Management Seminar
- WVIT 343 Branded Wine Marketing

Crop and Soil Science

Core Courses:
- AEPS 150 Forage Crops
- SS 221 Soil Health and Plant Nutrition

Select from the following electives (must be a course not already taken in the major):
- 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

Forestry and Natural Resources

Core Courses:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 227</td>
<td>Wildlife Conservation Biology</td>
</tr>
<tr>
<td>NR 142</td>
<td>Environmental Management</td>
</tr>
<tr>
<td>NR 208</td>
<td>Dendrology</td>
</tr>
<tr>
<td>NR 306</td>
<td>Natural Resource Ecology and Habitat Management</td>
</tr>
<tr>
<td>Select from the following electives:</td>
<td></td>
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<tr>
<td>NR/ES 308</td>
<td>Fire and Society</td>
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<tr>
<td>NR 312</td>
<td>Technology of Wildland Fire Management</td>
</tr>
<tr>
<td>NR/LA 317</td>
<td>The World of Spatial Data and Geographic Information Technology</td>
</tr>
<tr>
<td>NR 321</td>
<td>Water Systems Technology, Issues and Impacts</td>
</tr>
<tr>
<td>NR 323</td>
<td>Human Dimensions in Natural Resources Management</td>
</tr>
<tr>
<td>NR/ES 360</td>
<td>Ethnicity and the Land</td>
</tr>
<tr>
<td>NR 402</td>
<td>Forest Health</td>
</tr>
<tr>
<td>NR/CRP 404</td>
<td>Environmental Law</td>
</tr>
<tr>
<td>NR/CRP 408</td>
<td>Water Resource Law and Policy</td>
</tr>
</tbody>
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**Ornamental Horticulture**

Core Courses:
- BOT 121 General Botany
- AEPS 123 Landscape Installation and Maintenance
- AEPS 124 Plant Propagation

Select from the following electives:
- 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

**Area 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.

**Area A Communication**
- A1 Expository Writing 4

**Area B Science and Mathematics**
- B1 Mathematics/Statistics (4 units in Support plus 4 units in GE) 1
- B2 Life Science (4 units in Major) 1
- B3 Physical Science (4 units in Support) 1

- B4 One lab taken with either a B2 or B3 course

**Area C Arts and Humanities**
- C1 Literature 4
- C2 Philosophy 4
- C3 Fine/Performing Arts 4
- C4 Upper-division elective 4

**Area D/E Society and the Individual**
- D1 The American Experience (Title 5, Section 40404 requirement) 4
- D2 Political Economy 4
- D3 Comparative Social Institutions 4
- D4 Self Development (CSU Area E) 2
- D5 Upper-division elective (4 units in Support) 1

**Area F Technology**
- F Upper-division elective (4 units in Support) 1

Total units 52

1 Required in Major or Support; also satisfies GE.
2 MATH 116 and MATH 117 substitute.
3 The teaching credential requires specific courses. Consult with an advisor prior to developing an academic plan.
4 Students in the teaching career area pathway may not double-count this course.
5 Up to 8 units total of coursework from any of the following prefixes may be included: BIO, BOT, CHEM, GEOL, MCRO, MSCI and PHYS