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
ANGED 102 Introduction to Agricultural Education 2
or AGC 102 Orientation to Agricultural Communication
ANGED 404 Agricultural Leadership 3
ANGED 410 Computer Applications in Agricultural Education 2
ANGED 460 Research Methodology in Agricultural Education and Communication 1
ANGED 461 Senior Project I 1
or AGC 461 Senior Project I
ANGED 462 Senior Project II 1
or AGC 462 Senior Project II
AGC 452 Current Trends and Issues in Agricultural Communication 4
or AG 360 Holistic Management
or AG 450 Applied Holistic Management
or AG 452 Issues Affecting California Agriculture
AEPS 120 Principles of Horticulture and Crop Science 4
or AEPS 230 Environmental Horticulture
AGB 202 Introduction to Sales 4
AGB 212 Agricultural Economics 4
AGB 301 Food and Fiber Marketing 4
Select one from the following:

Approved Electives in Emphasis Area
Select courses from the below Guide to Approved Electives - Emphasis Area. At least 12-20 units must be at the 300-400 level.

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
MATH 118 Precalculus Algebra (B1) 1,2 4
or MATH 119 Precalculus Trigonometry
NR/ES 308 Fire and Society (D5) 4
or NR 323 Human Dimensions in Natural Resources Management

Approved Electives in Career Area
Select courses from the below Guide to Approved Electives - Career Area. At least 12-20 units must be at the 300-400 level. 3

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

FREE ELECTIVES
Free Electives 3 0-1
Total units 180

Guide to Approved Electives - Emphasis Areas
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 (At least 12 to 20 units must be at the 300-400 level): 24

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  

Animal Science  
Core Courses:  
ASCI 220  Introductory Animal Nutrition and Feeding  

Select two from the following:  
ASCI 221  Introduction to Beef Production  
ASCI 222  Systems of Swine Production  
ASCI 223  Systems of Small Ruminant Management  

Select one from the following:  
DSCI 330  Artificial Insemination and Embryo Biotechnology  
ASCI 321  Zoonoses and Veterinary Public Health Concerns  
ASCI 350  Nonruminant Nutrition  

Select from the following electives:  
ASCI 311  Advanced Beef Cattle System Management  
ASCI 325  Egg Production, Processing and Distribution  
ASCI 329  Principles of Range Management  
ASCI 330  Poultry Meat Production and Processing  
ASCI 342  Poultry Business Management  
ASCI 425  Meat Industry Study Tour  
DSCI 301  Dairy Cattle Nutrition  
DSCI 333  Dairy Animal Health, Safety and Applied Technology  

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:  
BIO 227  Wildlife Conservation Biology  
NR 142  Environmental Management  
NR 208  Dendrology  
NR 306  Natural Resource Ecology and Habitat Management  

Select from the following electives:  
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  
NR 402  Forest Health  
NR/CRP 404  Environmental Law  
NR/CRP 408  Water Resource Law and Policy  

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
Guide to Approved Electives - Career Areas

The following approved electives have been categorized by career area to guide students in their selections. Advisor approval of career area 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 follow the Teaching Agriculture Career Area and adhere to the approved list of courses. No more than 8 units total of BIO, BOT, CHEM, GEOL, MCRO, MSCI, PHYS can count towards the Teaching Agriculture Electives. If you are following the Individualized Career Area and need to count more than 8 units of the course prefixes listed above, consult with your advisor for approval.

Career Areas

Select Career Area of choice (At least 12-20 units must be at the 300-400 level):

Individualized
Any course with a prefix of 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.

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 courses can count towards Teaching Agriculture Electives.

Select 4 units from the following electives:

AGED 220 Agricultural Youth Conferences
BUS 207 Legal Responsibilities of Business
ECON 222 Macroeconomics
IME 142 Manufacturing Processes: Materials Joining
KINE 305 Drugs in Society
or KINE 443 Health Education for Teachers

Any lower division or upper division course with a prefix of AEPS, AG, AGB, ASCI, BIO, BOT, BRAE, CHEM, DSCI, ERSC, FSN, GEOL, MCRO, MSCI, NR, PHYS, RPTA, SS, WVIT.

Select 14 units from the following electives:
Any upper division courses with a prefix of AEPS, AG, AGB, ASCI, BIO, BOT, BRAE, CHEM, DSCI, ERSC, FSN, GEOL, MCRO, MSCI, NR, PHYS, RPTA, SS, WVIT.

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.

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/generalrequirembachelorsdegree/#generaleducationtext).
- Minimum of 12 units required at the 300 level.

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<tr>
<th>Area A</th>
<th>Communication</th>
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<tbody>
<tr>
<td>A1</td>
<td>Expository Writing</td>
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<tr>
<td>A2</td>
<td>Oral Communication</td>
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<td>A3</td>
<td>Reasoning, Argumentation and Writing</td>
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<tr>
<th>Area B</th>
<th>Science and Mathematics</th>
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<tbody>
<tr>
<td>B1</td>
<td>Mathematics/Statistics (4 units in Support plus 4 units in GE)</td>
</tr>
<tr>
<td>B2</td>
<td>Life Science (4 units in Major)</td>
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<tr>
<td>B3</td>
<td>Physical Science (4 units in Support)</td>
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<td>B4</td>
<td>One lab taken with either a B2 or B3 course</td>
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<tr>
<th>Area C</th>
<th>Arts and Humanities</th>
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<tbody>
<tr>
<td>C1</td>
<td>Literature</td>
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<td>C2</td>
<td>Philosophy</td>
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<td>C3</td>
<td>Fine/Performing Arts</td>
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<tr>
<td>C4</td>
<td>Upper-division elective</td>
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<tr>
<td>Area C elective</td>
<td>(Choose one course from C1-C5)</td>
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<tr>
<th>Area D/E</th>
<th>Society and the Individual</th>
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<tbody>
<tr>
<td>D1</td>
<td>The American Experience (Title 5, Section 40404 requirement)</td>
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<tr>
<td>D2</td>
<td>Political Economy</td>
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<td>D3</td>
<td>Comparative Social Institutions</td>
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<td>D4</td>
<td>Self Development (CSU Area E)</td>
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<tr>
<td>D5</td>
<td>Upper-division elective (4 units in Support)</td>
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<tr>
<th>Area F</th>
<th>Technology</th>
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<tr>
<td>F</td>
<td>Upper-division elective (4 units in Support)</td>
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Total units 52

1. Required in Major or Support; also satisfies GE.
Teaching candidates are advised to take KINE 250.