

AGRICULTURAL SYSTEMS MANAGEMENT (BS)

Degree Requirements and Curriculum

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation section of this catalog, including:

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

Note: No Major or Support courses may be selected as credit/no credit. In addition, no more than 12 units of cooperative or internship courses can count towards your degree requirements.

Code	Title	Units
MAJOR COURSES		
BRAE 1128	Careers in BioResource and Agricultural Engineering	2
BRAE 1150	Design Graphics and CAD for Agricultural Engineering	2
BRAE 1239	Engineering Surveying	3
BRAE 2142	Agricultural Power and Machinery Management	3
BRAE 2203	Systems Management I	4
BRAE 3301	Hydraulic and Mechanical Power Systems	3
BRAE 3317	Systems Management II	4
BRAE 3340	Irrigation Water Management (Upper-Division 2/5) ¹	3
BRAE 3343	Mechanical Systems Analysis	4
BRAE 3348	Energy for a Sustainable Society	3
BRAE 4419	Systems Management III	3
BRAE 4425	Agricultural Mechatronics	5
BRAE 4432	Agricultural Buildings	4
BRAE 4440	Agricultural Irrigation Systems	4
BRAE 4460	Senior Project I	1
BRAE 4461	Senior Project II	2
SUPPORT COURSES		
AGB 2212	Agricultural Economics	3
AGB 2214	Agribusiness Financial Accounting	3
AGB 2260	Agribusiness Data Literacy	3
AGB 3308	Introduction to Agribusiness Finance	3
AGB 3369	Agricultural Personnel Management	3
Select from the following: (5A & 5C) ¹		4
CHEM 1110	World of Chemistry	
CHEM 1120	Fundamentals of Chemical Structure and Properties	
Select from the following: (2) ¹		3
MATH 1007	Precalculus	
STAT 1110	Applied Statistical Concepts and Methods	
MATH 1267	Business Calculus	3
PHYS 1121	College Physics I	4
Approved Electives		
See Approved Electives course list below		9
GENERAL EDUCATION (GE)		
(See GE program requirements below)		33
FREE ELECTIVES		
Free Electives		0
Total Units		121

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

Approved Electives

Code	Title	Units
Select from the following: ¹		9
BRAE 2200	Special Problems for Undergraduates	
BRAE 3344	Fabrication Systems	
BRAE 3345	Photogrammetry and Remote Sensing with GIS Applications	
BRAE/NR 3349	Water for a Sustainable Society	
BRAE 4400	Special Problems	
BRAE 4447	Advanced Surveying with GIS Applications	
BRAE 4448	Bioconversion	
BRAE 5405	Chemigation	
BRAE 5435	Hydrology and Drainage	
BRAE 5436	Food and Agriculture Process Water Engineering	
BRAE 5532	Water Pumps and Wells	
BRAE 5533	Irrigation Project Design	
CRP/NR 4408	Water Resource Law and Policy	
EE 4434	Transportation Electrification and Energy Storage Systems	
FDSC 1110	Introduction to Food Science and Sustainability	
FSN 2202	Introduction to Human Nutrition	
FSN 2245	Elements of Food Safety	
FSN 2250	Food and Nutrition: Culture and Customs	
FSN 3305	Nutrition and Exercise for Health and Disease Prevention	
FSN 3316	Fermented Foods	
IME 1141	Introduction to Metal Casting and Prototyping	
IME 1142	Materials Joining	
IME 1143	Introduction to Design and Manufacturing	
IME 3320	Human Factors and Technology	
ITP 3330	Packaging Fundamentals	
ITP 3341	Packaging Polymers and Processing	
LA/NR 2218	Introduction to Geographic Information Systems (GIS)	
NR 3306	Natural Resource Ecology and Habitat Management	
NR 4416	Environmental Impact Analysis and Management	
NUTR 3310	Maternal and Child Nutrition	
NUTR 3315	Nutrition in Aging	
SS 1120	Introductory Soil Science	
SS 2221	Soil Health and Plant Nutrition	
Animal or Plant Production Course		
Select any ASCI, DSCI, PLSC course ¹		
Total Units		9

¹ The following internship or enterprise courses may not be taken as an approved elective: ASCI 2001, ASCI 2002, ASCI 2003, ASCI 2004, ASCI 2005, ASCI 2006, ASCI 2007, ASCI 2008, ASCI 2009, ASCI 2010, ASCI 2011, ASCI 2012, ASCI 2013, ASCI 2014, ASCI 2015, ASCI 2016, ASCI 2017, ASCI 3339, ASCI 4001, ASCI 4002, ASCI 4003, ASCI 4004, ASCI 4005, ASCI 4006, ASCI 4007, ASCI 4008, ASCI 4009, ASCI 4010, ASCI 4011, ASCI 4012, ASCI 4013, ASCI 4014, ASCI 4015, ASCI 4478, PLSC 2205, PLSC 2212, PLSC 2333, or PLSC 3339.

General Education (GE) Requirements

General Education (GE) Requirements

- 43 units required, 10 of which are specified in Major and/or Support.
- If any of the remaining 33 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/academic-standards-policies/general-requirements-bachelors-degree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: 1A (English Composition), 1B (Critical Thinking), 1C (Oral Communication), and 2 (Mathematics and Quantitative Reasoning).

Lower-Division General Education

Area 1		English Communication and Critical Thinking	
1A		Written Communication	3
1B		Critical Thinking	3
1C		Oral Communication	3
Area 2		Mathematics and Quantitative Reasoning	
2		Mathematics and Quantitative Reasoning (3 units in Support) ¹	0
Area 3		Arts and Humanities	
3A		Arts	3
3B		Humanities: Literature, Philosophy, Languages other than English	3
Area 4		Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.)	
4A		American Institutions (Title 5, Section 40404 Requirement)	3
4B		Social and Behavioral Sciences	3
Area 5		Physical and Life Sciences	
5A		Physical Sciences (3 units in Support) ¹	0
5B		Life Sciences	3
5C		Laboratory (may be embedded in a 5A or 5B course) (1 units in Support) ¹	0
Area 6		Ethnic Studies	
6		Ethnic Studies	3

Upper-Division General Education

Upper-Division 2/5	Mathematics and Quantitative Reasoning or Physical and Life Sciences (3 units in Major) ¹	0
Upper-Division 3	Arts and Humanities	3
Upper-Division 4	Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.)	3

Total Units	33
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¹ Required in Major or Support; also satisfies General Education (GE) requirement.