BS DAIRY SCIENCE

Program Learning Objectives

1. Technical competency within the disciplines of Dairy Science (Dairy Husbandry and Dairy Products Technology), with particular emphasis on the science, industry and practice.
2. Effective communication skills and leadership.
3. An advanced level of critical thinking skills and problem solving capability.
4. The capability of maintaining consistent, professional behavior and performance in a rapidly changing work environment.
5. Strong awareness of society as a whole and of agriculture's place in society.

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 (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		
ASCI 101	Introduction to the Animal Sciences	2
ASCI 220	Introductory Animal Nutrition and Feeding	4
ASCI 340	Animal Welfare and Ethics	4
ASCI 363	Undergraduate Seminar	2
DSCI 102	Dairy Operations and Safety	2
or ASCI 339	Internship in Animal Science	
DSCI 202	Dairy Promotion and Marketing	4
DSCI 229	General Dairy Manufacturing	4
DSCI 230	General Dairy Husbandry	4
DSCI 233	Milk Processing and Inspection	4
DSCI 241	Dairy Cattle Selection, Breeds, Fitting and Showing	4
DSCI 301	Dairy Cattle Nutrition	4
DSCI 321	Lactation Physiology	4
DSCI 330	Artificial Insemination and Embryo Biotechnology	4
DSCI 333	Dairy Animal Health, Safety and Applied Technology	4
DSCI 422	Breeding and Genetics of Dairy Cattle	4
DSCI 432	Advanced Dairy Herd Management	4
ASCI 477	Senior Project - Research Experience in Animal Science	3
or ASCI 479	Senior Project - Current Topics in Animal Science	
Upper Division Designated Electives		
Select from the following:		8
DSCI 401	Physical and Chemical Properties of Dairy Products	
DSCI 402	Quality Assurance and Control of Dairy Products	
DSCI 410	Advanced Dairy Nutrition	
DSCI 412	Dairy Farm Consultation	
DSCI 444	Dairy Microbiology	
SUPPORT COURSES		
BIO 111	General Biology (B2 & B3) [1, 2]	4
or BIO 161	Introduction to Cell and Molecular Biology	
CHEM 127	General Chemistry for Agriculture and Life Science I (B1 & B3) [1]	4
MATH 118	Precalculus Algebra (B4) [1, 3]	4
MCRO 221	Microbiology	4
STAT 218	Applied Statistics for the Life Sciences (GE Electives) [1]	4
Approved Electives		
At least 7 units must be 300-400 level [4]		
Consult with academic advisor regarding career tracks [5]		
Select from the following:		30
AGB 212	Agricultural Economics	
AGB 214	Agribusiness Financial Accounting	
AGB 301	Food and Fiber Marketing	
AGB 310	Agribusiness Credit and Finance	
AGB 369	Agricultural Personnel Management	
AGC 102	Orientation to Agricultural Communication & Agricultural Science	
AGC 205	Agricultural Communications	
AGC 404	Foundations of Agricultural Leadership	
ASCI 112	Principles of Animal Science	
ASCI 221	Introduction to Beef Production	
ASCI 226	Livestock Evaluation	
ASCI 229	Anatomy and Physiology of Farm Animals	
ASCI 290	Animal Production and Management Enterprise	
ASCI 302	Animal Genetics	
ASCI 304	Animal Genomics	
ASCI 310	Technical Veterinary Skills	
ASCI 311	Advanced Beef Cattle System Management	
ASCI 312	Production Medicine	
ASCI 319	Physiological Chemistry of Animals	
ASCI 351	Reproductive Physiology	
ASCI 366	Veterinary Pharmacology	
ASCI 405	Domestic Livestock Endocrinology	
ASCI 406	Applied Animal Embryology and Assisted Reproduction	
ASCI 407	Assisted Reproduction Technologies of Gametes and Embryos Laboratory	
ASCI 410	Applied Animal Behavior Science	

ASCI 419	Animal Metabolism and Nutritional Modeling
ASCI 438	Systemic Animal Physiology
ASCI 440	Immunology and Diseases of Animals
ASCI 490	Advanced Animal Production and Management Enterprise
BIO 150	Diversity and History of Life
BIO 162	Introduction to Organismal Form and Function
BIO 303	Survey of Genetics
BRAE 121	Agricultural Mechanics
BRAE 141	Agricultural Machinery Safety
BUS 212	Financial Accounting for Nonbusiness Majors
CHEM 128	General Chemistry for Agriculture and Life Science II
CHEM 129	General Chemistry for Agriculture and Life Science III
CHEM 216	Organic Chemistry I
CHEM 217	Organic Chemistry II
CHEM 218	Organic Chemistry III
CHEM 220	Organic Chemistry Laboratory For Life Sciences II
CHEM 223	Organic Chemistry Laboratory for Life Sciences III
CHEM 312	Organic Chemistry: Fundamentals and Applications
CHEM 314	Biochemistry: Fundamentals and Applications
CHEM 369	Biochemical Principles
COMS 301	Business and Professional Communication
Any DSCI course	
FSN 125	Introduction to Food Science
FSN 204	Food Processing Operations
FSN 230	Elements of Food Processing
FSN 275	Elements of Food Safety
FSN 311	Sensory Evaluation of Food
FSN 330	Principles of Food Engineering
FSN 335	Food Quality Assurance
FSN 370	Food Plant Sanitation and Prerequisite Programs
JOUR 203	News Reporting and Writing
MCRO 342	Public Health Microbiology
MCRO 421	Food Microbiology
NR 141	Introduction to Forest Ecosystem Management
PHYS 121	College Physics I
PHYS 122	College Physics II
PHYS 125	College Physics I Laboratory
PLSC 150	Forage Crops
PLSC 230	Environmental Horticulture
STAT 313	Applied Experimental Design and Regression Models
Any courses used in the following minors:	
Agribusiness	
Agricultural Communication	
Agricultural Education	
Agricultural Leadership	
Biotechnology	
Crop Science	
Environmental Soil Science	
Equine Science	
Food Science	
Meat Science and Processing	
Poultry Management	
Rangeland Resources	
Spanish	
Water Science	
GENERAL EDUCATION (GE)	
(See GE program requirements below.)	56
FREE ELECTIVES	
Free Electives	5
Total units	**180**

1. Required in Major or Support; also satisfies General Education (GE) requirement.
2. Students focusing on Dairy Foods should take BIO 161.
3. MATH 116 and MATH 117 substitute.
4. If a course is taken to meet a Major or Support requirement, it cannot be double-counted as an Approved Elective.
5. Consultation with advisor is recommended prior to selecting Approved Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

General Education (GE) Requirements

- 72 units required, 16 of which are specified in Major and/or Support.
- If any of the remaining 56 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	**English Language Communication and Critical Thinking**	
A1	Oral Communication	4
A2	Written Communication	4
A3	Critical Thinking	4
Area B	**Scientific Inquiry and Quantitative Reasoning**	
B1	Physical Science (4 units in Support) [1]	0
B2	Life Science (4 units in Support) [1]	0

B3	One lab taken with either a B1 or B2 course	
B4	Mathematics/Quantitative Reasoning (4 units in Support) [1]	0
Upper-Division B		4
Area C	**Arts and Humanities**	
Lower-division courses in Area C must come from three different subject prefixes.		
C1	Arts: Arts, Cinema, Dance, Music, Theater	4
C2	Humanities: Literature, Philosophy, Languages other than English	4
Lower-Division C Elective - Select a course from either C1 or C2		4
Upper-Division C		4
Area D	**Social Sciences - Select courses in Area D from at least two different prefixes**	
D1	American Institutions (Title 5, Section 40404 Requirement)	4
D2	Lower-Division D	4
Upper-Division D		4
Area E	**Lifelong Learning and Self-Development**	
Lower-Division E		4
Area F	**Ethnic Studies**	
F	Ethnic Studies	4
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 Support plus 4 units in GE) [1]		4
Total units		**56**

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