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 Desi	gnated Electives	
Select from the following:		

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 COURSE	S	
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
MCR0 221	Microbiology	4
STAT 218	Applied Statistics for the Life Sciences (GE Electives) ¹	4
Approved Electives		
At least 7 units mus	st be 300-400 level ⁴	
Consult with acade	mic advisor regarding career tracks ⁵	
Select from the follo		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	STAT 313	Applied Experimental Design and Regression Models		
ASCI 438	Systemic Animal Physiology	Any course	Any courses used in the following minors:		
ASCI 440	Immunology and Diseases of	Agribusine	Agribusiness		
	Animals	Agricultura	l Communication		
ASCI 490 Advanced Animal Production and		Agricultura	I Education		
DIO 150	Management Enterprise	Agricultura	Agricultural Leadership		
BIO 150 BIO 162	Diversity and History of Life		Biotechnology		
BIO 102	Introduction to Organismal Form and Function	Crop Scien	ce		
BIO 303	Survey of Genetics	Environmental Soil Science			
BRAE 121	Agricultural Mechanics	Equine Science			
BRAE 141	Agricultural Machinery Safety		Food Science		
BUS 212	Financial Accounting for		ice and Processing		
	Nonbusiness Majors	Poultry Ma	-		
CHEM 128	General Chemistry for Agriculture and	-	Resources		
	Life Science II		Spanish		
CHEM 129	General Chemistry for Agriculture and	Water Scie			
	Life Science III	GENERAL EDU	JCATION (GE)		
CHEM 216	Organic Chemistry I	(See GE program requirements below.)			
CHEM 217	Organic Chemistry II	FREE ELECTIV	/ES		
CHEM 218	Organic Chemistry III	Free Electives			
CHEM 220	Organic Chemistry Laboratory For Life Sciences II	Total units	18		
CHEM 223	Organic Chemistry Laboratory for Life Sciences III	Required in Major or Support; also satisfies General Education (GE) requirement.			
CHEM 312	Organic Chemistry: Fundamentals		focusing on Dairy Foods should take BIO 161.		
	and Applications	³ MATH 116 and MATH 117 substitute.			
CHEM 314	Biochemistry: Fundamentals and Applications	⁴ If a course is taken to meet a Major or Support requirement, it cannot be double-counted as an Approved Elective.			
CHEM 369	Biochemical Principles	⁵ Consultation with advisor is recommended prior to selecting			
COMS 301	Business and Professional Communication		Electives; bear in mind your selections may impact pursui ccalaureate studies and/or goals.		
Any DSCI cours	se	Comoral	Education (CE) Demuinements		
FSN 125	Introduction to Food Science	General	Education (GE) Requirements		
FSN 204	Food Processing Operations		• 72 units required, 16 of which are specified in Major and/or Support.		
FSN 230	Elements of Food Processing		ne remaining 56 units is used to satisfy a Major or Support		
FSN 275	Elements of Food Safety		nt, additional units of Free Electives may be needed to		
FSN 311	Sensory Evaluation of Food		complete the total units required for the degree.		
FSN 330	Principles of Food Engineering		 See the complete GE course listing (https://catalog.calpoly.edu/ generalreguirementsbachelorsdegree/#generaleducationtext) 		
FSN 335	Food Quality Assurance	-	generalrequirementsbachelorsdegree/#generaleducationtext).		
FSN 370	Food Plant Sanitation and		 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/ 		
	Prerequisite Programs	-			
JOUR 203	News Reporting and Writing		ve Reasoning).		
MCRO 342	Public Health Microbiology				
MCRO 421	Food Microbiology	Area A	English Language Communication and Critical Thinking		
NR 141	Introduction to Forest Ecosystem Management	A1	Oral Communication		
PHYS 121	College Physics I	A2	Written Communication		
PHYS 122	College Physics II	A3	Critical Thinking		
PHYS 125	College Physics I Laboratory	Area B	Scientific Inquiry and Quantitative		
PLSC 150	Forage Crops	D1	Reasoning		
PLSC 230	Environmental Horticulture	B1	Physical Science (4 units in Support)		
		B2	Life Science (4 units in Support) ¹		

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 cour different subject pr	rses in Area C must come from three efixes.	
C1	Arts: Arts, Cinema, Dance, Music, Theater	4
C2	Humanities: Literature, Philosophy, Languages other than English	4
Lower-Division C El or C2	ective - Select a course from either C1	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 Area	as B, C, and D	
Select courses from division or upper-di	n two different areas; may be lower- vision courses.	
GE Electives (4 unit	s in Support plus 4 units in GE) 1	4
Total units		56

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