

# BS ANIMAL SCIENCE

## Program Learning Objectives

1. Demonstrate problem solving skills.
2. Demonstrate a proficiency in working as a leader and as a part of a team to achieve common goals.
3. Integrate and apply technical and conceptual knowledge.
4. Exhibit an understanding of their professional and ethical responsibilities as animal scientists, including a respect for diversity.
5. Communicate effectively in a professional manner.

## 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 112	Principles of Animal Science	4
ASCI 211	Meat Science	4
ASCI 220	Introductory Animal Nutrition and Feeding	4
ASCI 229	Anatomy and Physiology of Farm Animals	4
ASCI 290	Animal Production and Management Enterprise	4
or ASCI 490	Advanced Animal Production and Management Enterprise	
ASCI 302	Animal Genetics	4
ASCI 304	Animal Genomics	3
ASCI 340	Animal Welfare and Ethics	4
ASCI 351	Reproductive Physiology	4
ASCI 363	Undergraduate Seminar	2
ASCI 477	Senior Project - Research Experience in Animal Science	3
or ASCI 478	Senior Project - Advanced Internship Experience in Animal Science	
or ASCI 479	Senior Project - Current Topics in Animal Science	

### Production Courses

Select one from each of the three categories: 12

#### Ruminants

ASCI 221	Introduction to Beef Production
or ASCI 223	Systems of Small Ruminant Management
or DSCI 230	General Dairy Husbandry

#### Nonruminants

ASCI 222	Systems of Swine Production
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or ASCI 225 Introduction to Poultry Management

### Companion Animals or Range Management

ASCI 224	Equine Science
or ASCI 227	Companion Animal Science
or ASCI 239	Principles of Rangeland Management

### Biochemistry/Chemistry

Select from the following: 4-5

ASCI 319	Physiological Chemistry of Animals (Upper-division B) <sup>1</sup>
CHEM 314	Biochemistry: Fundamentals and Applications (Upper-division B) <sup>1</sup>
CHEM 369	Biochemical Principles (Upper-division B) <sup>1</sup>

### Nutrition

Select from the following: 4

ASCI 346	Equine Nutrition
ASCI 350	Nonruminant Nutrition
ASCI 355	Ruminant Nutrition
ASCI 419	Animal Metabolism and Nutrition
DSCI 301	Dairy Cattle Nutrition

### Physiology

Select from the following: 4-5

ASCI 333	Equine Reproduction
ASCI 366	Veterinary Pharmacology
ASCI 405	Domestic Livestock Endocrinology
ASCI 406	Applied Animal Embryology and Assisted Reproduction
ASCI 438	Systemic Animal Physiology
ASCI 440	Immunology and Diseases of Animals
ASCI 455	Advanced Equine Reproductive Technologies
DSCI 321	Lactation Physiology
DSCI 330	Artificial Insemination and Embryo Biotechnology

### Approved Electives<sup>2,3</sup>

Select 16 units of any course with an ASCI or DSCI prefix at the 300-500 level. 16

### SUPPORT COURSES

BIO 111	General Biology (B2 & B3) <sup>1</sup>	4
or BIO 161	Introduction to Cell and Molecular Biology	
CHEM 127	General Chemistry for Agriculture and Life Science I (B1 & B3) <sup>1</sup>	4
CHEM 128	General Chemistry for Agriculture and Life Science II	4
CHEM 216	Organic Chemistry I <sup>4</sup>	5
or CHEM 312	Organic Chemistry: Fundamentals and Applications	
MATH 118	Precalculus Algebra (B4) <sup>1,5</sup>	4
or MATH 161	Calculus for the Life Sciences I	
STAT 218	Applied Statistics for the Life Sciences (GE Electives) <sup>1</sup>	4

### GENERAL EDUCATION (GE)

(see GE program requirements below.) 52

### FREE ELECTIVES

Free Electives<sup>6</sup> 19-21  
 4 units of free electives must be at the 300-500 level to ensure completion of the required minimum of 60 units of upper-division courses.

**Total units 180**

- <sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.
- <sup>2</sup> If a course is taken to meet a Major or Support requirement, it cannot be double-counted in the Approved Elective category.
- <sup>3</sup> The Approved Elective category may include a maximum of 6 units between ASCI 339 or ASCI 490.
- <sup>4</sup> CHEM 212 accepted in lieu of CHEM 312, but not for upper-division credit.
- <sup>5</sup> MATH 115 or MATH 116, and MATH 117 substitute for MATH 118.
- <sup>6</sup> Students should consult a faculty advisor before electing Credit/No Credit grading for any course. Courses elected for Credit/No Credit grading may not be recognized by post-graduate academic programs. If a 500-level course is used to satisfy their free elective requirements it cannot be used towards a graduate program.

## General Education (GE) Requirements

- 72 units required, 20 of which are specified in Major and/or Support.
- If any of the remaining 52 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).

<b>Area A</b>	<b>English Language Communication and Critical Thinking</b>	
A1	Oral Communication	4
A2	Written Communication	4
A3	Critical Thinking	4
<b>Area B</b>	<b>Scientific Inquiry and Quantitative Reasoning</b>	
B1	Physical Science (4 units in Support) <sup>1</sup>	0
B2	Life Science (4 units in Support) <sup>1</sup>	0
B3	One lab taken with either a B1 or B2 course	
B4	Mathematics/Quantitative Reasoning (4 units in Support) <sup>1</sup>	0
Upper-Division B (4 units in Major) <sup>1</sup>		0
<b>Area C</b>	<b>Arts and Humanities</b>	
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
<b>Area D</b>	<b>Social Sciences - Select courses in Area D from at least two different prefixes</b>	
D1	American Institutions (Title 5, Section 40404 Requirement)	4
D2	Lower-Division D	4
Upper-Division D		4
<b>Area E</b>	<b>Lifelong Learning and Self-Development</b>	
Lower-Division E		4
<b>Area F</b>	<b>Ethnic Studies</b>	
F	Ethnic Studies	4
<b>GE Electives in Areas B, C, and D</b>		
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) <sup>1</sup>		4
<b>Total units</b>		<b>52</b>

- <sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.