

ANIMAL SCIENCE & MANAGEMENT, BACHELOR OF SCIENCE

College of Agricultural & Environmental Sciences

Anne Todgham, Ph.D., Chairperson of the Department

The Animal Science & Management major combines a thorough education in the basic biology of domestic animal species with a strong background in agricultural economics. Graduates of this interdisciplinary major will be well positioned to adjust to our rapidly changing world and job market.

The Program

The interdisciplinary program in Animal Science and Management combines a fundamental background in the natural sciences (chemistry, biology, physiology, nutrition, genetics, mathematics, and behavior), with an understanding of economics and humanities. After completing preparatory courses, students focus on both the animal species that interest them (horses, cattle, sheep, companion animals, goats, fish, crustaceans or mollusks, among others) and principles of managerial economics (marketing, finance, business organization, or systems analysis). Students preparing for medical or veterinary school can meet professional entrance requirements with those of this major if they plan ahead.

Career Alternatives

Job opportunities for successful graduates are plentiful and include positions with banking and financial institutions, agribusiness, Peace Corps, and farms of all scales. Most Animal Science and Management graduates are well prepared for professional study (medical, law, veterinary, and graduate business schools) as well as graduate research programs leading to the M.S. or Ph.D. degrees. Advanced degrees open doors to work as extension specialists, farm advisors, and teachers, and prepare students for international service.

Lead Faculty Advisor

L. Allen Pettey, Ph.D., Assistant Professor of Teaching

The major requirements below are in addition to meeting University Degree Requirements (<https://catalog.ucdavis.edu/undergraduate-education/university-degree-requirements/>) & College Degree Requirements (<https://catalog.ucdavis.edu/undergraduate-education/college-degree-requirements/>); unless otherwise noted. The minimum number of units required for the Animal Science & Management Bachelor of Science is 130.

Code	Title	Units
Written & Oral Expression		
Choose two; if not chosen for English College Requirement:		8
CMN 130	Group Communication	
CMN 136	Organizational Communication	
or CMN 136V	Organizational Communication	
CMN 140	Introduction to Mass Communication	
UWP 101	Advanced Composition	
or UWP 101V	Advanced Composition	

or UWP 101Y	Advanced Composition	
UWP 102A	Writing in the Disciplines: Special Topics	
UWP 102B	Writing in the Disciplines: Biology	
UWP 102C	Writing in the Disciplines: History	
UWP 102D	Writing in the Disciplines: International Relations	
UWP 102E	Writing in the Disciplines: Engineering	
UWP 102F	Writing in the Disciplines: Food Science & Technology	
UWP 102G	Writing in the Disciplines: Environmental Writing	
UWP 104A	Writing in the Professions: Business Writing	
or UWP 104AV	Writing in the Professions: Business Writing	
or UWP 104AY	Writing in the Professions: Business Writing	
UWP 104B	Writing in the Professions: Law	
UWP 104C	Writing in the Professions: Journalism	
UWP 104D	Writing in the Professions: Elementary & Secondary Education	
UWP 104E	Writing in the Professions: Science	
UWP 104F	Writing in the Professions: Health	
or UWP 104FV	Writing in the Professions: Health	
or UWP 104FY	Writing in the Professions: Health	
Written & Oral Expression Subtotal		8
Preparatory Subject Matter		
<i>Animal Science</i>		8
ANS 001	Domestic Animals & People	
ANS 002	Introductory Animal Science	
<i>Biological Science</i>		15
BIS 002A	Introduction to Biology: Essentials of Life on Earth	
BIS 002B	Introduction to Biology: Principles of Ecology & Evolution	
BIS 002C	Introduction to Biology: Biodiversity & the Tree of Life	
<i>Chemistry</i>		16
CHE 002A	General Chemistry	
CHE 002B	General Chemistry	
CHE 008A	Organic Chemistry: Brief Course	
CHE 008B	Organic Chemistry: Brief Course	
Choose one:		3-4
PLS 021	Application of Computers in Technology	
or PLS 021V	Application of Computers in Technology	
ECS 015	(Discontinued)	
<i>Economics</i>		8
ECN 001A	Principles of Microeconomics	
or ECN 001AV	Principles of Microeconomics	
or ECN 001AY	Principles of Microeconomics	
ECN 001B	Principles of Macroeconomics	
or ECN 001BV	Principles of Macroeconomics	
<i>Management</i>		8
MGT 011A	Elementary Accounting	
MGT 011B	Elementary Accounting	

<i>Mathematics; choose a series:</i>	9-12	Dairy (p. 3)
MAT 016A and & MAT 016B DISC and (Discontinued) & MAT 016C DISC		Equine (p. 3)
MAT 017A Calculus for Biology & Medicine & MAT 017B and Calculus for Biology & Medicine & MAT 017C and Calculus for Biology & Medicine		Livestock (p. 3)
MAT 021A Calculus & MAT 021B and Calculus & MAT 021C and Calculus		Poultry (p. 3)
Choose one:	4	Individualized (p. 4)
PLS 120 Applied Statistics in Agricultural Sciences		Area of Specializations Subtotal
STA 100 Applied Statistics for Biological Sciences		14-16
STA 103 Applied Statistics for Business & Economics		Restricted Electives
Or other courses in quantitative skills with prior approval of the Master Advisor.		Choose at least two additional courses with approval of advisor; minimum 8 units; duplicate from Depth Subject Matter courses not counted:
Preparatory Subject Matter Subtotal	71-75	ARE 018 Business Law
Depth Subject Matter		ARE 112 Fundamentals of Organization Management
<i>Biological Science</i>	4	ARE 113 Fundamentals of Marketing Management
BIS 101 Genes & Gene Expression or BIS 101V Genes & Gene Expression		ARE 118 Tax Accounting
<i>Nutrition</i>	4	ARE 120 Agricultural Policy
NUT 115 Animal Nutrition		ARE 130 Agricultural Markets
Choose one:	5	ARE 132 Cooperative Business Enterprises
NPB 101 Systemic Physiology		ARE 136 Managerial Marketing
ANS 100 Animal Physiology		ARE 138 International Commodity & Resource Markets
<i>Business Management</i>	16	ARE 140 Farm Management
<i>Agricultural & Resource Economics</i>		ARE 142 Personal Finance
ARE 100A Intermediate Microeconomics: Theory of Production & Consumption		ARE 143 Basics of Investing
Choose one:		ARE 144 Real Estate Economics
ARE 113 Fundamentals of Marketing Management		ARE 145 Farm & Rural Resources Appraisal
ARE 130 Agricultural Markets		ARE 150 Agricultural Labor
ARE 136 Managerial Marketing		ARE 155 Operations Research & Management Science
ARE 138 International Commodity & Resource Markets		ARE 157 Analysis for Operations & Production Management
Choose one:		ARE 176 Environmental Economics
ARE 120 Agricultural Policy		ANS 103 Animal Welfare
ARE 132 Cooperative Business Enterprises		ANS 104 Principles & Applications of Domestic Animal Behavior
ARE 140 Farm Management		ANS 106 Domestic Animal Behavior Laboratory
ARE 145 Farm & Rural Resources Appraisal		ANS 115 Advanced Horse Production
ARE 157 Analysis for Operations & Production Management		ANS 118 Fish Production
Choose one:		ANS 119 Invertebrate Aquaculture
ANS 128 Agricultural Applications of Linear Programming		ANS 120 Principles of Meat Science
ARE 155 Operations Research & Management Science		ANS 120L Meat Science Laboratory
Depth Subject Matter Subtotal	29	ANS 123 Animal Growth & Development
Area of Specializations		ANS 124 Lactation
Choose one area of specialization below:	14-16	ANS 125 Equine Exercise Physiology
Aquatic Animals (p. 3)		ANS 126 Equine Nutrition
Companion Animals (p. 3)		ANS 127 Advanced Equine Reproduction
		ANS 128 Agricultural Applications of Linear Programming
		ANS 129 Environmental Stewardship in Animal Production Systems
		ANS 131 Reproduction & Early Development in Aquatic Animals
		ANS 136 Techniques & Practices of Fish Culture
		ANS 137 Techniques & Practices of Avian Culture

ANS 140	Management of Laboratory Animals
ANS 141	Equine Enterprise Management
ANS 142	Companion Animal Care & Management
ANS 143	Pig & Poultry Care & Management
ANS 144	Beef Cattle & Sheep Production
ANS 145	Meat Processing & Marketing
ANS 146	Dairy Cattle Production
ANS 147	Dairy Processing & Marketing
ANS 149	Farrier Science
ANS 170	Ethics of Animal Use
ANS 192	Internship in Animal Science
ANS 194	Research in Animal Science
ANS 194HA	Undergraduate Honors Thesis in Animal Science ¹
ANS 194HB	Undergraduate Honors Thesis in Animal Science ¹
ANS 194HC	Undergraduate Honors Thesis in Animal Science ¹
AVS 100	Avian Biology
AVS 103	Avian Development & Genomics
AVS 115	Raptor Biology
AVS 121	Avian Reproduction
AVS 123	Management of Birds
AVS 149	Egg Production Management
AVS 150	Nutrition of Birds
ANG 101	Animal Cytogenetics
ANG 105	Horse Genetics
ANG 107	Genetics & Animal Breeding
ANG 111	Molecular Biology Laboratory Techniques
NUT 122	(Discontinued)
NUT 123	(Discontinued)
NUT 123L	(Discontinued)
NUT 124	Nutrition & Feeding of Finfishes
ABI 102	Animal Biochemistry & Metabolism (strongly recommended)
ABI 103	Animal Biochemistry & Metabolism
ECS 124	Theory & Practice of Bioinformatics
MGT 100	(Discontinued)
NPB 117	Avian Physiology
NPB 121	Physiology of Reproduction
NPB 121L	Physiology of Reproduction Laboratory
NPB 130	Physiology of the Endocrine Glands
WFC 120	Biology & Conservation of Fishes
WFC 120L	Laboratory in Biology & Conservation of Fishes
WFC 130	Physiological Ecology of Wildlife
Restricted Electives Subtotal	8-10
Total Units	130-138

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Only one quarter of ANS 194H series may be used.

Aquatic Animals Specialization

Code	Title	Units
ANS 018	Introductory Aquaculture	4
Choose one:		4
ANS 118	Fish Production	
ANS 119	Invertebrate Aquaculture	
ANS 131	Reproduction & Early Development in Aquatic Animals	4
ANS 148	Enterprise Analysis in Animal Industries	4
Total Units		16

Companion Animals Specialization

Code	Title	Units
ANS 042	Introductory Companion Animal Biology	4
ANS 140	Management of Laboratory Animals	4
ANS 142	Companion Animal Care & Management	4
ANS 148	Enterprise Analysis in Animal Industries	4
Total Units		16

Dairy Specialization

Code	Title	Units
ANS 041	Domestic Animal Production	2
ANS 041L	Domestic Animal Production Laboratory	2
ANS 146	Dairy Cattle Production	5
ANS 147	Dairy Processing & Marketing	3
ANS 148	Enterprise Analysis in Animal Industries	4
Total Units		16

Equine Specialization

Code	Title	Units
ANS 015	Introductory Horse Husbandry	3
ANS 115	Advanced Horse Production	4
ANS 141	Equine Enterprise Management	4
ANS 148	Enterprise Analysis in Animal Industries	4
Total Units		15

Livestock Specialization

Code	Title	Units
ANS 041	Domestic Animal Production	2
ANS 041L	Domestic Animal Production Laboratory	2
Choose one:		4
ANS 143	Pig & Poultry Care & Management	
ANS 144	Beef Cattle & Sheep Production	
ANS 145	Meat Processing & Marketing	4
ANS 148	Enterprise Analysis in Animal Industries	4
Total Units		16

Poultry Specialization

Code	Title	Units
AVS 011	Introduction to Poultry Science	3
ANS 143	Pig & Poultry Care & Management	4

ANS 145	Meat Processing & Marketing	4
ANS 148	Enterprise Analysis in Animal Industries	4
Total Units		15

Individualized Specialization

Students may, with prior approval of their advisor and the Lead Faculty Advisor, design their own individualized specialization within the major. The specialization will consist of four to six courses with one of the courses being ANS 148. The other courses will include an introduction, care and management, and processing and/or marketing aspects of the animal of interest.