ANIMAL SCIENCE, BACHELOR OF SCIENCE

College of Agricultural & Environmental Sciences
Anne Todgham, Ph.D., Chairperson of the Department

The Major Program
The Animal Science major is devoted to the sciences central to understanding biological function of domestic and captive animals, their care, management, and utilization by people for food, fiber, companionship, work, and recreation. Advances in science and technology, and an ever-growing human population, have increased the complexity of issues surrounding the care and management of animals. Specializations within the major allow students to develop a scientific appreciation of animals and their relationship to their environment. Graduates in Animal Science are able to advance the science and technology of animal care and management in an objective and effective manner for the betterment of animals and society.

The Program
The curriculum provides depth in the biological and physiological sciences and allows students to specialize within the broad field of applied animal science. Study begins with introductory courses in animal science, biology, chemistry, mathematics, and statistics. Students undertake advanced courses in animal behavior, biochemistry, genetics, nutrition, and physiology and the integration of these sciences to animal growth, production, and performance. Students complete the curriculum by choosing a specialization in either an animal science discipline (behavior, biochemistry, genetics, nutrition, or physiology) or in the sciences particular to a class of animals (aquatic, avian, companion and captive, equine, laboratory, livestock and dairy, or poultry).

Career Alternatives
A wide range of career opportunities are available to graduates. The primary goal of the major is to prepare students for graduate study leading to the M.S. and Ph.D. degrees; for continued study in a professional school such as veterinary medicine, human medicine, or dentistry; for careers in research, agricultural production, farm and ranch management, or positions in business, sales, financial services, health care, agricultural extension, consulting services, teaching, journalism, or laboratory technology.

Graduate Study
The Animal Biology Graduate Group offers a program of study and research leading to M.S. or Ph.D. degrees in Animal Biology. See Animal Biology (Graduate Group) (https://catalog.ucdavis.edu/departments-programs-degrees/animal-biology-graduate-group/); see also Graduate Studies (http://gradstudies.ucdavis.edu/).

Lead Faculty Advisor
Russ Hovey, Ph.D.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ANS 001</td>
<td>Domestic Animals &amp; People</td>
<td>12</td>
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<tr>
<td>ANS 002</td>
<td>Introductory Animal Science</td>
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**Preparatory Subject Matter**

<table>
<thead>
<tr>
<th>Preparatory Subject Matter Subtotal</th>
<th>53-57</th>
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**Depth Subject Matter**

<table>
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<tr>
<th>Biology</th>
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<tr>
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<tbody>
<tr>
<td>BIS 101</td>
<td>Genes &amp; Gene Expression</td>
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<tr>
<td>ANG 107</td>
<td>Genetics &amp; Animal Breeding</td>
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<tr>
<td>ABI 102</td>
<td>Animal Biochemistry &amp; Metabolism</td>
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<tr>
<td>ABI 103</td>
<td>Animal Biochemistry &amp; Metabolism</td>
<td></td>
</tr>
<tr>
<td>NPB 101</td>
<td>Systemic Physiology</td>
<td></td>
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<tr>
<td>or ANS 100</td>
<td>Animal Physiology</td>
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</tr>
<tr>
<td>ANS 104</td>
<td>Principles &amp; Applications of Domestic Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>ANS 150</td>
<td>Animal Health &amp; Disease</td>
<td></td>
</tr>
<tr>
<td>ANS 170</td>
<td>Ethics of Animal Use</td>
<td></td>
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<tr>
<td>NUT 115</td>
<td>Animal Nutrition</td>
<td></td>
</tr>
<tr>
<td>NUT 141</td>
<td>Comparative Animal Nutrition &amp; Metabolism</td>
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**Integrative Animal Biology Restricted Electives**: For Companion & Captive, Disciplinary Focus-Behavior, Disciplinary Focus-Biochemistry, Disciplinary Focus-Genetics, Disciplinary Focus-Nutrition, Disciplinary Focus-Physiology, Equine Science, Laboratory Animals, and Livestock & Dairy specializations: must take two from the following list: 

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ANS 041</td>
<td>Domestic Animal Production</td>
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<tr>
<td>ANS 041L</td>
<td>Domestic Animal Production Laboratory</td>
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</table>
Animal Science, Bachelor of Science

ANS 123 Animal Growth & Development
ANS 124 Lactation
NBP 121 Physiology of Reproduction
NBP 130 Physiology of the Endocrine Glands

For Aquatic Animal specialization; must take two from the following list:
ANS 123 Animal Growth & Development
EVE 112 Biology of Invertebrates
NBP 123/APC 100 Comparative Vertebrate Organology
WFC 120 Biology & Conservation of Fishes

For Avian Sciences & Poultry specializations; must take two from the following list:
ANS 123 Animal Growth & Development
AVS 100 Avian Biology
NPB 117 Avian Physiology
NPB 130 Physiology of the Endocrine Glands

Laboratory
Choose one: 2-6
ANG 111 Molecular Biology Laboratory Techniques
ANS 106 Domestic Animal Behavior Laboratory
ANS 133 Animal Cell Culture Laboratory
ANS 134 Animal Nutrition Laboratory
ANS 135 Production Animal Laboratory
ANS 136 Techniques & Practices of Fish Culture
ANS 137 Techniques & Practices of Avian Culture
ANS 139 Experimental Animal Physiology
MCB 120L Molecular Biology & Biochemistry Laboratory
MCB 160L Principles of Genetics Laboratory
NBP 101L Systemic Physiology Laboratory
NBP 104L Cellular Physiology/Neurobiology Laboratory
PMI 126L Immunology Laboratory

Depth Subject Matter Subtotal 52-58

Area of Specialization
Choose one area of specialization below: 12

Aquatic Animals (p. 2)
Avian Sciences (p. 2)
Companion & Captive Animals (p. 2)
Disciplinary Focus—Behavior (p. 2)
Disciplinary Focus—Biochemistry (p. 2)
Disciplinary Focus—Genetics (p. 2)
Disciplinary Focus—Nutrition (p. 2)
Disciplinary Focus—Physiology (p. 2)
Equine Science (p. 2)
Laboratory Animals (p. 3)
Livestock & Dairy (p. 3)
Poultry (p. 3)

Area of Specialization Subtotal 12

Total Units 117-127

1 ANS 001 will be waived for junior transfer students.
2 ANS 041, ANS 041L will be waived for junior transfer students.

Aquatic Animals Specialization
Code Title Units
ANS 018 Introductory Aquaculture 4

Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.

Avian Sciences Specialization
Code Title Units
AVS 013 Birds, Humans & the Environment 3

Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.

Companion & Captive Animals Specialization
Code Title Units
ANS 042 Introductory Companion Animal Biology 4
ANS 142 Companion Animal Care & Management 4

Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.

Disciplinary Focus—Behavior Specialization
Code Title Units
Select upper division units with approval from your faculty advisor, to form a coherent series of courses.

Disciplinary Focus—Biochemistry Specialization
Code Title Units
Select upper division units with approval from your faculty advisor, to form a coherent series of courses.

Disciplinary Focus—Genetics Specialization
Code Title Units
Select upper division units with approval from your faculty advisor, to form a coherent series of courses.

Disciplinary Focus—Nutrition Specialization
Code Title Units
Select upper division units with approval from your faculty advisor, to form a coherent series of courses.

Disciplinary Focus—Physiology Specialization
Code Title Units
Select upper division units with approval from your faculty advisor, to form a coherent series of courses.

Equine Science Specialization
Code Title Units
ANS 015 Introductory Horse Husbandry 3
ANS 115 Advanced Horse Production 4

Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.
### Laboratory Animals Specialization

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<tr>
<td>ANS 042</td>
<td>Introductory Companion Animal Biology</td>
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<tr>
<td>ANS 140</td>
<td>Management of Laboratory Animals</td>
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Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.

### Livestock & Dairy Specialization

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<thead>
<tr>
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<th>Units</th>
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<tbody>
<tr>
<td>Choose two:</td>
<td>8-9</td>
<td></td>
</tr>
<tr>
<td>ANS 143</td>
<td>Pig &amp; Poultry Care &amp; Management</td>
<td></td>
</tr>
<tr>
<td>ANS 144</td>
<td>Beef Cattle &amp; Sheep Production</td>
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<tr>
<td>ANS 146</td>
<td>Dairy Cattle Production</td>
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Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.

### Poultry Specialization

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<tbody>
<tr>
<td>AVS 011</td>
<td>Introduction to Poultry Science</td>
<td>3</td>
</tr>
<tr>
<td>ANS 143</td>
<td>Pig &amp; Poultry Care &amp; Management</td>
<td>4</td>
</tr>
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</table>

Select additional upper division units with approval from your faculty advisor, to form a coherent series of courses.