

# Animal Science (ANSC)

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Animal Science Website (<http://animal-science.uark.edu/>)

The animal science major offers three areas of concentration designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility. Students gain valuable experience pertaining to the production of beef and dairy cattle, swine, horses, sheep, and companion animals. In addition, extensive study is offered in the specialized areas of animal health, breeding and genetics, meat science, nutrition, and physiology.

Students majoring in animal science are prepared for a variety of careers. Pre-veterinary, pre-medical, and pre-professional course requirements may be fulfilled while meeting degree requirements. Specific career opportunities include positions and services related to the production, merchandising, processing and distribution of meat, milk, and related products. Additional opportunities include field persons, farm and herd managers, and other agribusiness-related positions. With additional academic training, animal science majors may become extension livestock specialists, nutritionists, geneticists, and physiologists.

The Animal Enterprise Concentration is a science-based degree program designed for students desiring a broader general background in animal science and offers students the greatest degree of flexibility in adapting their degree program to a wide variety of career paths. It offers a larger list of elective classes and opportunity to minor in other disciplines.

The Pre-Professional Science Concentration is designed primarily for students who intend to compete for admission to professional schools, advanced post-graduate degree programs, or other career paths that require a strong background and understanding of basic and applied sciences.

The Equine Systems Concentration is designed for students who desire a sound science-based background in Animal Science, but desire a more intense study of equine management and equine science.

Students should consult an animal science adviser for specific course selections in the elective areas. With appropriate advising, students have an opportunity to complete at least one minor within the 120-hour degree program.

## Requirements for B.S.A. in Animal Science with Animal Enterprise Concentration

### Requirements for a Major in Animal Science

State minimum core (<http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/>) and discipline specific general education requirements:

(Course work that meets state minimum core requirements is in bold.)

<b>University Requirements</b>	<b>1</b>
UNIV 1001 University Perspectives	
<b>Communications</b>	<b>12</b>
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)	

Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) COMM 1313 is required for most Schools of Veterinary Medicine; Recommend AGED 3143, AGED 4003, or COMM 1313 to fulfill Learning Outcome 1.2. Recommend AGED 4003 or COMM 1313 to fulfill Learning Outcome 5.1.

### U.S. History or Government **3**

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)  
or HIST 201:History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)  
or PLSC 20C American National Government (ACTS Equivalency = PLSC 2003)

### Mathematics **3**

**MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)**

### Biological Sciences **8**

**BIOL 1543 Principles of Biology (ACTS Equivalency = & BIOL 1541L BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)**

BIOL 2013 General Microbiology (ACTS Equivalency = BIOL & BIOL 2011L 2004 Lecture)  
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)

### Chemical and Physical Sciences **8**

**CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency & CHEM 1071L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)**

**or CHEM 1124 University Chemistry II (ACTS Equivalency = CHEM & CHEM 1124L 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)**

Select 4 hours from the following:

CHEM 2613 Organic Physiological Chemistry (ACTS & CHEM 2611L Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)

CHEM 3603 Organic Chemistry I & CHEM 3601L and Organic Chemistry I Laboratory

PHYS 2013 College Physics I (ACTS Equivalency = PHYS & PHYS 2011L 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)

ENTO 1023 Insects, Science and Society & ENTO 1021L and Insects, Science and Society Lab

ENSC 1003 Environmental Science & ENSC 1001L and Environmental Science Laboratory

### Fine Arts and Humanities **6**

Select 3 hours Fine Arts and 3 hours Humanities from the State Minimum Core list.

### Social Sciences **9**

Select 9 hours Social Sciences courses from the State Minimum Core List.

### Animal Science Core Requirements (31 hours)

ANSC 1033 Introductory Animal Sciences **3**

ANSC 1781	Career Preparation and Development	1
ANSC 2113 & ANSC 2111L	Introduction to Animal Evaluation and Handling and Introduction To Animal Evaluation and Handling Lab	4
ANSC 3123 or ANSC 3133	Principles of Genetics Animal Breeding and Genetics	3
ANSC 3143 & ANSC 3141L	Principles of Animal Nutrition and Animal Nutrition Laboratory	4
ANSC 3213	Behavior of Domestic Animals	3
ANSC 3033	Animal Physiology	3
ANSC 3433	Fundamentals of Reproductive Physiology	3
ANSC 4993	Animal Science Capstone	3
Select 4 hours from the following:		4
ANSC 4252	Cow-Calf Management	
ANSC 4262	Swine Production	
ANSC 4272	Sheep Production	
ANSC 4282	Horse Production	
ANSC 4452	Milk Production	
ANSC 4482	Companion Animal Management	
ANSC 4652	Stocker-Feedlot Cattle Management	
ANSC 4662	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 410V	Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))	

**Concentration Requirements 20-21**

General Electives – Students may need to take up to 12 hours of additional 3000 or above level courses to fulfill the 40 hour upper division requirements. 18-19

**Total Hours 120**

## Requirements for Animal Enterprise Concentration

### Animal Enterprise (20-21 hours)

ANSC 3072 or ANSC 3282	Equine Selection and Evaluation Livestock Judging and Selection	2
ANSC 4163 or ANSC 4552	Companion Animal Nutrition	2-3
AGEC 3303 or ANSC 3723	Food and Agricultural Marketing Horse and Livestock Merchandising	3
ANSC 2333 or ANSC 3003 or ANSC 3013 or ANSC 3333 or ANSC 3613	Introduction to Animal Health Applied Animal Parasitology Parasitisms of Domesticated Non-Herbivores Diseases of Livestock Meat Science	3
Select 4 hours from the following		4
ANSC 4252	Cow-Calf Management	
ANSC 4262	Swine Production	
ANSC 4272	Sheep Production	
ANSC 4282	Horse Production	
ANSC 4452	Milk Production	
ANSC 4482	Companion Animal Management	
ANSC 4652	Stocker-Feedlot Cattle Management	

ANSC 4662	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 410V	Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))	
Select 6 hours from the following:		6
ANSC 2003	Introduction to Equine Industry	
AGEC 2143	Agribusiness Financial Records	
AGEC 3403	Farm Business Management	
CSES 1203	Introduction to Plant Sciences	
ASTM 2903	Agricultural and Human Environmental Sciences Applications of Microcomputers	
FDSC 2523	Sanitation and Safety in Food Processing Operations	

**Total Hours 20-21**

## Animal Science B.S.A. with Animal Enterprise Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (<http://catalog.uark.edu/undergradcatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program. (\*See degree audit in UAConnect for complete course list.)

	Units	
	Fall	Spring
UNIV 1001 University Perspectives	1	
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
ANSC 1033 Introductory Animal Sciences Satisfies General Education Outcome 3.4:	3	
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1 )	3	
ANSC 1781 Career Preparation and Development	1	
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3)		3
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3
ANSC 2113 Introduction to Animal Evaluation and Handling & ANSC 2111L Introduction To Animal Evaluation and Handling Lab		4
General Elective		2
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1, 2</sup>		3
<b>Year Total:</b>	<b>15</b>	<b>15</b>

Second Year	Units	
	Fall	Spring
Satisfies General Education Outcome 3.4:		
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) or CHEM 1123/1121L University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture)	4	
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1,2</sup>	3	
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)	3	
ANSC 3213 Behavior of Domestic Animals	3	
ANSC Enterprise Elective	3	
ANSC 2333 Introduction to Animal Health or ANSC 3003 Applied Animal Parasitology or ANSC 3013 Parasitisms of Domesticated Non-Herbivores or ANSC 3613 Meat Science		3
BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 2011L General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)		4
ANSC 3072 Equine Selection and Evaluation or ANSC 3282 Livestock Judging and Selection		2
Chemical or Physical Science Elective		4
General Elective		2
Year Total:	16	15

Third Year	Units	
	Fall	Spring
General Elective	3	
ANSC 3433 Fundamentals of Reproductive Physiology	3	
ANSC 3143 Principles of Animal Nutrition & ANSC 3141L Animal Nutrition Laboratory	4	
Animal Enterprise Electives	3	
Communication Intensive Elective <sup>3</sup>	3	
Communication Intensive Elective <sup>3</sup>		3
Social Science State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>4</sup>		3
ANSC 3133 Animal Breeding and Genetics or ANSC 3123 Principles of Genetics		3
ANSC 3033 Animal Physiology		3
ANSC 3723 Horse and Livestock Merchandising or AGECE 3303 Food and Agricultural Marketing		3
Year Total:	16	15

Fourth Year	Units	
	Fall	Spring
ANSC Core Electives	4	

Social Science State Minimum Core Elective (Satisfies General Education Outcome 3.3)	3	
ANSC 4163 Companion Animal Nutrition or ANSC 4552	2-3	
General Electives	6	
ANSC Enterprise Electives		4
General Electives		5-6
ANSC 4993 Animal Science Capstone (Satisfies General Education Outcome 6.1)		3
Year Total:	15	13

**Total Units in Sequence: 120**

- <sup>1</sup> The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
- <sup>2</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
- <sup>3</sup> Recommend COMM 1313 or AGED 4003 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. COMM 1313 is required for most Schools of Veterinary Medicine.
- <sup>4</sup> The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirements for B.S.A. in Animal Science with Pre-Professional Science Concentration

### Requirements for a Major in Animal Science

State minimum core (<http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/>) and discipline specific general education requirements:

(Course work that meets state minimum core requirements is in bold.)

<b>University Requirements</b>	<b>1</b>
UNIV 1001 University Perspectives	
<b>Communications</b>	<b>12</b>
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)	
Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) COMM 1313 is required for most Schools of Veterinary Medicine; Recommend AGED 3143, AGED 4003, or COMM 1313 to fulfill Learning Outcome 1.2. Recommend AGED 4003 or COMM 1313 to fulfill Learning Outcome 5.1.	
<b>U.S. History or Government</b>	<b>3</b>
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)	

or HIST 201:History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)	
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)	
<b>Mathematics</b>	<b>3</b>
<b>MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)</b>	
<b>Biological Sciences</b>	<b>8</b>
<b>BIOL 1543 Principles of Biology (ACTS Equivalency = &amp; BIOL 1541L BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</b>	
BIOL 2013 General Microbiology (ACTS Equivalency = BIOL & BIOL 2011L 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)	
<b>Chemical and Physical Sciences</b>	<b>8</b>
<b>CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency &amp; CHEM 1071L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)</b>	
<b>or CHEM 112University Chemistry II (ACTS Equivalency = CHEM &amp; CHEM 1121L 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)</b>	
Select 4 hours from the following:	
CHEM 2613 Organic Physiological Chemistry (ACTS & CHEM 2611LEquivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)	
CHEM 3603 Organic Chemistry I & CHEM 3601L and Organic Chemistry I Laboratory	
PHYS 2013 College Physics I (ACTS Equivalency = PHYS & PHYS 2011L 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	
ENTO 1023 Insects, Science and Society & ENTO 1021L and Insects, Science and Society Lab	
ENSC 1003 Environmental Science & ENSC 1001L and Environmental Science Laboratory	
<b>Fine Arts and Humanities</b>	<b>6</b>
Select 3 hours Fine Arts and 3 hours Humanities from the State Minimum Core list.	
<b>Social Sciences</b>	<b>9</b>
Select 9 hours Social Sciences courses from the State Minimum Core List.	
<b>Animal Science Core Requirements (31 hours)</b>	
ANSC 1033 Introductory Animal Sciences	3
ANSC 1781 Career Preparation and Development	1
ANSC 2113 Introduction to Animal Evaluation and Handling & ANSC 2111L and Introduction To Animal Evaluation and Handling Lab	4
ANSC 3123 Principles of Genetics	3
or ANSC 3133 Animal Breeding and Genetics	
ANSC 3143 Principles of Animal Nutrition & ANSC 3141L and Animal Nutrition Laboratory	4
ANSC 3213 Behavior of Domestic Animals	3

ANSC 3033 Animal Physiology	3
ANSC 3433 Fundamentals of Reproductive Physiology	3
ANSC 4993 Animal Science Capstone	3
Select 4 hours from the following:	4
ANSC 4252 Cow-Calf Management	
ANSC 4262 Swine Production	
ANSC 4272 Sheep Production	
ANSC 4282 Horse Production	
ANSC 4452 Milk Production	
ANSC 4482 Companion Animal Management	
ANSC 4652 Stocker-Feedlot Cattle Management	
ANSC 4662 Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 410V Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))	

<b>Concentration Requirements</b>	<b>20-21</b>
General Electives – Students may need to take up to 12 hours of additional 3000 or above level courses to fulfill the 40 hour upper division requirements.	18-19
<b>Total Hours</b>	<b>120</b>

## Requirements for Pre-Professional Science Concentration

<b>Pre-Professional Requirements (20-21 hours)</b>		
CHEM 3613 Organic Chemistry II & CHEM 3611L and Organic Chemistry II Laboratory	4	
CHEM 3813 Elements of Biochemistry	3	
BIOL 1603 Principles of Zoology (ACTS Equivalency = BIOL & BIOL 1601L 1054 Lecture) and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab) or BIOL 2533 Cell Biology	3-4	
PHYS 2013 College Physics I (ACTS Equivalency = PHYS & PHYS 2011L 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	4	
PHYS 2033 College Physics II (ACTS Equivalency = PHYS & PHYS 2031L 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)	4	
Select 2 hours from the following (In addition to those taken for the core requirement):	2	
ANSC 4252 Cow-Calf Management		
ANSC 4262 Swine Production		
ANSC 4272 Sheep Production		
ANSC 4282 Horse Production		
ANSC 4452 Milk Production		
ANSC 4482 Companion Animal Management		
ANSC 4652 Stocker-Feedlot Cattle Management		
ANSC 4662 Comparative Studies in Panamanian and US Agricultural Practices		
ANSC 410V Special Topics in Animal Sciences (Study Abroad to New Zealand or Australia)		
<b>Total Hours</b>	<b>20-21</b>	



## Animal Science B.S.A. with Pre-Professional Science Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program. (\*See degree audit in UAConnect for complete course list.)

First Year	Units	
	Fall	Spring
UNIV 1001 University Perspectives	1	
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
ANSC 1033 Introductory Animal Sciences	3	
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)	3	
Satisfies General Education Outcome 3.4:		
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
ANSC 1781 Career Preparation and Development	1	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3)		3
ANSC 2113 Introduction to Animal Evaluation and Handling & ANSC 2111L Introduction To Animal Evaluation and Handling Lab		4
General Elective (recommended CHEM 1103/1101L University Chemistry I w/lab)		4
General Elective (1 hour)		1
Year Total:	15	15

Second Year	Units	
	Fall	Spring
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>1</sup> Satisfies General Education Outcome 3.4:	3	
CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) or CHEM 1073 and CHEM 1071L	4	
ANSC 3213 Behavior of Domestic Animals	3	
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)	3	
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>2,3</sup>	3	

BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 2011L General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)		4
General Elective		2
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>2,3</sup>		3
Chemical and Physical Sciences Elective**		4
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>1</sup>		3
Year Total:	16	16

Third Year	Units	
	Fall	Spring
ANSC 3433 Fundamentals of Reproductive Physiology	3	
ANSC 3143 Principles of Animal Nutrition & ANSC 3141L Animal Nutrition Laboratory	4	
PHYS 2013 College Physics I (ACTS Equivalency = PHYS 2014 Lecture) & PHYS 2011L College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	4	
CHEM 3613 Organic Chemistry II & CHEM 3611L Organic Chemistry II Laboratory	4	
ANSC Core Elective		2
General Elective		2-3
ANSC 3033 Animal Physiology		3
PHYS 2033 College Physics II (ACTS Equivalency = PHYS 2024 Lecture) & PHYS 2031L College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)		4
BIOL 1603 Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture) & BIOL 1601L Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab) or BIOL 2533 Cell Biology		4
Year Total:	15	15

Fourth Year	Units	
	Fall	Spring
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3)	3	
ANSC Core Elective	2	
General Elective	4	
ANSC 3123 Principles of Genetics or ANSC 3133 Animal Breeding and Genetics	3	
CHEM 3813 Elements of Biochemistry	3	
PPRF Requirements Elective*		2
Social Science State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>4</sup>		3
ANSC 4993 Animal Science Capstone (Satisfies General Education Outcome 6.1)		3
General Electives		5
Year Total:	15	13

**Total Units in Sequence: 120**

- <sup>1</sup> Recommend COMM 1313 or AGED 4003 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. COMM 1313 is required for most Schools of Veterinary Medicine.
- <sup>2</sup> The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:  
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H,  
MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
- <sup>3</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
- <sup>4</sup> The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirements for B.S.A. in Animal Science with Equine Systems Concentration

### Requirements for a Major in Animal Science

State minimum core (<http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/>) and discipline specific general education requirements:

(Course work that meets state minimum core requirements is in bold.)

<b>University Requirements</b>	<b>1</b>
UNIV 1001 University Perspectives	
<b>Communications</b>	<b>12</b>
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)	
Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) COMM 1313 is required for most Schools of Veterinary Medicine; Recommend AGED 3143, AGED 4003, or COMM 1313 to fulfill Learning Outcome 1.2. Recommend AGED 4003 or COMM 1313 to fulfill Learning Outcome 5.1.	
<b>U.S. History or Government</b>	<b>3</b>
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)	
or HIST 201:History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)	
or PLSC 200 American National Government (ACTS Equivalency = PLSC 2003)	
<b>Mathematics</b>	<b>3</b>
<b>MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)</b>	
<b>Biological Sciences</b>	<b>8</b>
<b>BIOL 1543 Principles of Biology (ACTS Equivalency = &amp; BIOL 1541L BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</b>	

BIOL 2013 General Microbiology (ACTS Equivalency = BIOL & BIOL 2011L 2004 Lecture)  
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)

### Chemical and Physical Sciences 8

**CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency & CHEM 1071L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)**  
**or CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM & CHEM 1121L 1224 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)**

Select 4 hours from the following:

CHEM 2613 Organic Physiological Chemistry (ACTS & CHEM 2611LEquivalency = CHEM 1224 Lecture)  
and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)

CHEM 3603 Organic Chemistry I  
& CHEM 3601L and Organic Chemistry I Laboratory

PHYS 2013 College Physics I (ACTS Equivalency = PHYS & PHYS 2011L 2014 Lecture)  
and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)

ENTO 1023 Insects, Science and Society  
& ENTO 1021L and Insects, Science and Society Lab

ENSC 1003 Environmental Science  
& ENSC 1001L and Environmental Science Laboratory

### Fine Arts and Humanities 6

Select 3 hours Fine Arts and 3 hours Humanities from the State Minimum Core list.

### Social Sciences 9

Select 9 hours Social Sciences courses from the State Minimum Core List.

### Animal Science Core Requirements (31 hours)

ANSC 1033 Introductory Animal Sciences	3
ANSC 1781 Career Preparation and Development	1
ANSC 2113 Introduction to Animal Evaluation and Handling & ANSC 2111L and Introduction To Animal Evaluation and Handling Lab	4
ANSC 3123 Principles of Genetics or ANSC 3133 Animal Breeding and Genetics	3
ANSC 3143 Principles of Animal Nutrition & ANSC 3141L and Animal Nutrition Laboratory	4
ANSC 3213 Behavior of Domestic Animals	3
ANSC 3033 Animal Physiology	3
ANSC 3433 Fundamentals of Reproductive Physiology	3
ANSC 4993 Animal Science Capstone	3

Select 4 hours from the following:

ANSC 4252 Cow-Calf Management

ANSC 4262 Swine Production

ANSC 4272 Sheep Production

ANSC 4282 Horse Production

ANSC 4452 Milk Production

ANSC 4482 Companion Animal Management

ANSC 4652 Stocker-Feedlot Cattle Management

ANSC 4662	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 410V	Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))	
<b>Concentration Requirements</b>		<b>20-21</b>
General Electives – Students may need to take up to 12 hours of additional 3000 or above level courses to fulfill the 40 hour upper division requirements.		18-19
<b>Total Hours</b>		<b>120</b>

## Requirements for Equine Systems Concentration

### Equine System Concentration (21 hours)

ANSC 2003	Introduction to Equine Industry	3
ANSC 3723	Horse and Livestock Merchandising	3
ANSC 4282	Horse Production	2
ANSC 2333	Introduction to Animal Health	3
or ANSC 3003	Applied Animal Parasitology	
or ANSC 3333	Diseases of Livestock	
Select 10 hours from the following:		10
ANSC 2303L	Introduction to Horsemanship	
ANSC 3072	Equine Selection and Evaluation	
ANSC 3753	Equine Assisted Activities and Therapies	
ANSC 4123	Legal Issues in Animal Agriculture	
ANSC 4163	Companion Animal Nutrition	
ANSC 4173	Thoroughbred Horse Industry	
ANSC 4303	Comparative Veterinary Anatomy	
ANSC 4552		
<b>Total Hours</b>		<b>21</b>

## Animal Science B.S.A. with an Equine Systems Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program. (\*See UAConnect Degree Audit for complete course list.)

First Year	Units	
	Fall	Spring
UNIV 1001 University Perspectives	1	
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
ANSC 1033 Introductory Animal Sciences	3	
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)	3	
Satisfies General Education Outcome 3.4:		
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
ANSC 1781 Career Preparation and Development	1	

ANSC 2003 Introduction to Equine Industry		3
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3
General Elective		2
ANSC 2113 Introduction to Animal Evaluation and Handling & ANSC 2111L Introduction To Animal Evaluation and Handling Lab		4
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1,2</sup>		3
Year Total:	15	15

Second Year	Units	
	Fall	Spring
Satisfies General Education Outcome 3.4:		
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) or CHEM 1123 and CHEM 1121L	4	
ANSC 3213 Behavior of Domestic Animals	3	
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)	3	
Equine Systems Elective*	3	
Social Science State Minimum Core Elective (Satisfies General Education Outcome 3.3)	3	
ANSC 2333 Introduction to Animal Health or ANSC 3003 Applied Animal Parasitology or ANSC 3333 Diseases of Livestock		3
BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 2011L General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)		4
Equine Systems Elective*		2
Chemistry or Physical Science Elective*		4
General Elective		2
Year Total:	16	15

Third Year	Units	
	Fall	Spring
ANSC 3433 Fundamentals of Reproductive Physiology	3	
ANSC 3143 Principles of Animal Nutrition & ANSC 3141L Animal Nutrition Laboratory	4	
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1,2</sup>	3	
ANSC 3723 Horse and Livestock Merchandising	3	
Equine Systems Elective*	3	
Social Science State Minimum Core Elective (Satisfies General Education Outcome 3.3)		3
ANSC 3133 Animal Breeding and Genetics		3
ANSC 3033 Animal Physiology		3

ANSC 4282 Horse Production	2	
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>3</sup>	3	
Year Total:	16	14

Fourth Year	Units	
	Fall	Spring
ANSC Core Elective*	2	
Equine Systems Elective*	2	
General Elective	6	
Social Science State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>4</sup>	3	
ANSC 4993 Animal Science Capstone (Satisfies General Education Outcome 6.1)	3	
ANSC Core Elective*	2	
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>3</sup>	3	
General Electives		8
Year Total:	16	13

**Total Units in Sequence: 120**

- <sup>1</sup> The Fine Arts elective courses which satisfy General Education Outcome 3.1 include:  
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H,  
MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
- <sup>2</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include:  
CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
- <sup>3</sup> Recommend COMM 1313 or AGED 4003 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. COMM 1313 is required for most Schools of Veterinary Medicine.
- <sup>4</sup> The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Minor in Equine Science (EQSC-M)

A minor in Equine Science prepares students for jobs in the equine industry. A student planning to minor in Equine Science should meet with an Animal Science adviser for more information. The Equine Science minor is only available to students outside of the ANSC major.

The minor consists of 20 hours to include the following:

<b>Core Requirements</b>	<b>14</b>
ANSC 1033 Introductory Animal Sciences	
ANSC 3033 Animal Physiology	
ANSC 3133 Animal Breeding and Genetics or ANSC 3433 Fundamentals of Reproductive Physiology	

ANSC 3143 Principles of Animal Nutrition	
ANSC 4282 Horse Production	
<b>Core Equine Electives:</b>	<b>6</b>
ANSC 2303L Introduction to Horsemanship	
ANSC 3072 Equine Selection and Evaluation	
ANSC 3723 Horse and Livestock Merchandising	
ANSC 401V Internship in Animal Sciences	
ANSC 4123 Legal Issues in Animal Agriculture	
ANSC 4173 Thoroughbred Horse Industry	
<b>Total Hours</b>	<b>20</b>

## Minor in Animal Science (ANSC-M)

A minor in Animal Science prepares students for jobs in the animal industries. A student planning to minor in animal science must consult with an Animal Science adviser. The minor consists of 20 hours to include the following:

### Category 1 (6 hours)

ANSC 1033 Introductory Animal Sciences	3
ANSC 2113 Introduction to Animal Evaluation and Handling	3

### Category 2 6

Select 6 hours from the following:

ANSC 3033 Animal Physiology	
ANSC 3123 Principles of Genetics	
ANSC 3133 Animal Breeding and Genetics	
ANSC 3143 Principles of Animal Nutrition	
ANSC 3433 Fundamentals of Reproductive Physiology	
ANSC 3613 Meat Science	

### Category 3 2

Select 2 hours from the following:

ANSC 4252 Cow-Calf Management	
ANSC 4262 Swine Production	
ANSC 4272 Sheep Production	
ANSC 4282 Horse Production	
ANSC 4452 Milk Production	
ANSC 4482 Companion Animal Management	
ANSC 4652 Stocker-Feedlot Cattle Management	
ANSC 4662 Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 410V Special Topics in Animal Sciences (Study Abroad - New Zealand or Australia)	

### Category 4 6

Select 6 hours from any other ANSC courses that are 2000-level or above

**Total Hours 20**

## Requirements for Microcertificate in Equine Management

The undergraduate Microcertificate in Equine Management would provide 9 hours of online content based on research and best practices in equine care and management. It is designed to provide undergraduate students with a microcertificate in specific equine knowledge areas — general equine care and management, successful equine sales options, and equine behavior. This microcertificate will be open to undergraduates



pursuing an Animal Science degree, those outside of the field of Animal Science but with an interest in horses and county extension agents.

**Requirements:** To receive the undergraduate Equine Management Microcertificate, students are required to take 9 hours of coursework in Animal Science within the Bumpers College of Agricultural, Food and Life Sciences. There are no prerequisites for enrolling in the Equine Management Microcertificate courses.

**Required Courses:**

ANSC 2003	Introduction to Equine Industry	3
ANSC 3723	Horse and Livestock Merchandising	3
ANSC 3773	Equine Behavior	3
<b>Total Hours</b>		<b>9</b>

## Faculty

**Coffey, Ken**, Ph.D. (University of Missouri-Columbia), M.S. (University of Kentucky), B.S. (University of Tennessee), Professor, 1996, 2003.

**Gadberry, M. Shane**, Ph.D., M.S., B.S. (University of Arkansas), Professor, 2006, 2019.

**Huang, Yan**, Ph.D. (University of Wyoming), M.S. (Dankook University), B.S. (China Agricultural University), Assistant Professor, 2015.

**Jennings, John A.**, Ph.D. (University of Missouri), M.S. (University of Arkansas), B.S. (Southwest Missouri State University), Professor, 1998.

**Kegley, Beth**, Ph.D., M.S. (North Carolina State University), B.S. (Virginia Polytech Institute and State University), Professor, 1996, 2007.

**Kutz, Bryan Richard**, M.S. (Western Kentucky University), B.S. (Oklahoma State University), A.S. (Northern Oklahoma College), Instructor, 1997.

**Littlejohn, Brittni P.**, Ph.D. (Texas A&M University), Assistant Professor, 2019.

**Looney, Charles R.**, Ph.D. (Louisiana State University), Professor, 2019.

**Looper, Michael L.**, Ph.D. (Oklahoma State University), M.S., B.S. (University of Arkansas), Professor, 2011.

**Maxwell, Charles**, Ph.D. (University of Wisconsin-Madison), M.S., B.S. (University of Georgia), Professor, 1996.

**Philipp, Dirk**, Ph.D. (Texas Tech University), M.S., B.S. (University of Leizig, Germany), Associate Professor, 2007, 2015.

**Pohlman, Fred W.**, Ph.D. (Kansas State University), M.S. (University of Tennessee), B.S. (University of Missouri-Columbia), Professor, 1997, 2009.

**Powell, Jeremy G.**, Ph.D. (University of Arkansas), D.V.M. (Oklahoma State University), B.S. (University of Arkansas), Professor, 2009, 2013.

**Rivera, Daniel J.**, Ph.D. (New Mexico State University), M.S. (West Texas A&M University), Associate Professor, 2021.

**Rorie, Rick**, Ph.D. (Louisiana State University), M.S., B.S. (University of Arkansas), Professor, 1989, 2003.

**Rumley, Elizabeth R.**, LL.M. (University of Arkansas), J.D. (University of Toledo), B.A. (Michigan State University), Instructor, 2012.

**Russell, Mark**, Ed.D. (Texas Tech University), M.S., B.S. (Colorado State University), Assistant Professor, 2010.

**Thomas, Lauren**, D.V.M. (Oklahoma State University), B.S. (University of Arkansas), Teaching Assistant Professor, 2016.

**Vierck, Kelly**, Ph.D. (Texas Tech University), M.S. (Kansas State University), B.S. (Oklahoma State University), Assistant Professor, 2020.

**Ward, Heidi**, Ph.D. (University of Oklahoma), D.V.M. (Oklahoma State University), B.S. (University of Oklahoma), Assistant Professor, 2015.

**Yazwinski, Tom**, Ph.D. (North Carolina State University), M.S. (University of Maine), B.S. (University of Vermont), University Professor, 1977, 2004.

**Zhao, Jiangchao**, Ph.D. (University of Wisconsin-Madison), M.S., B.S. (China Agricultural University), Associate Professor, 2015, 2019.

## Courses

**ANSC 1001L. Introductory to Animal Sciences Laboratory. 1 Hour.**

Study of facilities used in production, processing, and management in animal agriculture. Identification, selection evaluation and testing of livestock, meat, and milk. Laboratory 3 hours per week. (Typically offered: Fall and Spring)

**ANSC 1033. Introductory Animal Sciences. 3 Hours.**

Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, nutrition, reproduction, and animal health. The importance of livestock, equine, and companion animals and their allied industries will also be discussed. (Typically offered: Fall and Spring)

**ANSC 1033H. Honors Introductory Animal Sciences. 3 Hours.**

Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, nutrition, reproduction, and animal health. The importance of livestock, equine, and companion animals and their allied industries will also be discussed. Prerequisite: Honors standing. (Typically offered: Fall and Spring)

This course is equivalent to ANSC 1033.

**ANSC 1062. Sustainable Integrated Small Animal Farming. 2 Hours.**

Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented. (Typically offered: Spring)

This course is cross-listed with POSC 1062.

**ANSC 1781. Career Preparation and Development. 1 Hour.**

Course will cover concepts necessary for preparing for a career in the animal sciences and allied industries. Concepts of goal setting, effective written and verbal communications, interpersonal skills, professional behaviors, presentation skills, portfolio and resume development will be presented. (Typically offered: Fall)

**ANSC 2003. Introduction to Equine Industry. 3 Hours.**

Examination of careers and business opportunities in the equine industry. Students will gain the opportunity to identify high quality horses through evaluation of conformation and locomotion. Students will also gain skill at oral presentation and be knowledgeable of costs and responsibilities associated with horse ownership. (Typically offered: Spring)

**ANSC 2111L. Introduction To Animal Evaluation and Handling Lab. 1 Hour.**

Laboratory component stressing fundamental concepts of animal structure, composition, and behavior, and animal handling as they relate to animal production, safety, well-being, and handler safety. One 3-hour lab weekly. Corequisite: ANSC 2113 (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 1033. (Typically offered: Fall and Spring)

**ANSC 2113. Introduction to Animal Evaluation and Handling. 3 Hours.**

Fundamental concepts of the interrelationship of animal growth, structure, function, and animal handling as they relate to animal production, safety, well-being, and handler safety. Corequisite: ANSC 2111L (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 1033. (Typically offered: Fall and Spring)

**ANSC 2252L. Introduction to Livestock and Meat Evaluation. 2 Hours.**

Develop an understanding between live animal evaluation and carcass composition. Comparative judging including meat evaluation, classification and selection of beef cattle, sheep and swine. (Typically offered: Spring)

**ANSC 2303L. Introduction to Horsemanship. 3 Hours.**

A study of modern horsemanship training techniques involving the psychology and ethology (reason for the behavior) of equine social behavior and how it pertains to learning patterns; application of fundamental behavioral concepts in training of horses, and modification of desirable and undesirable behavioral patterns. Prerequisite: Instructor consent. (Typically offered: Fall and Spring)

**ANSC 2333. Introduction to Animal Health. 3 Hours.**

This course will cover the fundamental principles of animal health and disease prevention. Course discussion will include sanitation, disinfection, immunization, nutrition, housing and husbandry, causes of diseases, parasitism, clinical signs of disease, prevention and treatment options for diseases. Prerequisite: BIOL 1543 and sophomore standing. (Typically offered: Fall)

**ANSC 2411L. Domestic Animal Microbiology Laboratory. 1 Hour.**

This course is designed for students working on their Poultry Science, Animal Science, and/or Food Science degrees. Students enrolled in this course will learn how to collect samples aseptically from live birds and meat samples, transport samples, and culture samples on a variety of different microbiological media. In addition, students will have the opportunity to visit one of the microbiology labs in the local poultry production facilities. Students will learn how to handle samples, stain bacterial cells, and identify unknown bacteria from field samples. A lab period will be assigned to teaching students on how to use bacteria in food production by teaching students how to prepare and sample yogurt. Corequisite: ANSC 2413. (Typically offered: Fall)

This course is cross-listed with POSC 2411L.

**ANSC 2413. Domestic Animal Microbiology. 3 Hours.**

Basic concepts of domestic animal and poultry microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Corequisite: ANSC 2411L. Prerequisite: (BIOL 1543 and BIOL 1541L) and (CHEM 1073 and ((CHEM 1071L or CHEM 1103) or (CHEM 1123 and CHEM 1121L))). (Typically offered: Fall)

This course is cross-listed with POSC 2413.

**ANSC 3003. Applied Animal Parasitology. 3 Hours.**

The economically important parasites of domestic animals with emphasis on their host relationships and management considerations. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Fall Even Years)

**ANSC 3013. Parasitisms of Domesticated Non-Herbivores. 3 Hours.**

Course will provide applied instruction and appreciation for the parasitisms of our domesticated swine, chickens, turkeys, dogs and cats. (Typically offered: Fall Odd Years)

**ANSC 3033. Animal Physiology. 3 Hours.**

Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and (CHEM 1123 or CHEM 1073). (Typically offered: Spring)

**ANSC 3033H. Honors Animal Physiology. 3 Hours.**

Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and (CHEM 1123 or CHEM 1073). (Typically offered: Spring)

This course is equivalent to ANSC 3033.

**ANSC 3072. Equine Selection and Evaluation. 2 Hours.**

Students will learn criteria for evaluation and selection of breeding and show animals and will gain expertise in the evaluation of breed types and show ring characteristics. Includes field trips to various breed operations. Students in this class will be well prepared to participate in equine judging team activities. Prerequisite: Instructor consent. (Typically offered: Spring)

**ANSC 3123. Principles of Genetics. 3 Hours.**

Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Typically offered: Fall)

This course is cross-listed with POSC 3123.

**ANSC 3133. Animal Breeding and Genetics. 3 Hours.**

Application of the principles of genetics to the breeding of farm animals. Lecture 3 hours per week. Corequisite: Drill component. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)

**ANSC 3141L. Animal Nutrition Laboratory. 1 Hour.**

Animal Nutrition Laboratory (FA) Practical and quantitative approach to animal nutrition; use of various methods of feedstuff evaluation including ration balancing for domestic animals. Laboratory 2 hours per week. Corequisite: ANSC 3143 for ANSC majors only. Prerequisite: MATH 1203. (Typically offered: Fall)

**ANSC 3143. Principles of Animal Nutrition. 3 Hours.**

Scientific approach to animal nutrition involving the mechanisms through which feed nutrients are utilized by farm animals. Lecture 3 hours per week. Corequisite: ANSC 3141L (only a corequisite for students majoring in Animal Science). Prerequisite: ANSC 1033. (Typically offered: Fall)

**ANSC 3152. Applied Animal Nutrition. 2 Hours.**

Practical approach to animal nutrition; physical and chemical composition of feedstuffs, feed processing and preparation, nutrient interactions, and application of nutritional principles to feeding domestic animals. Lecture 2 hours per week. Corequisite: ANSC 3141L. Prerequisite: ANSC 3143 and MATH 1203. (Typically offered: Fall)

**ANSC 3213. Behavior of Domestic Animals. 3 Hours.**

Behavior associated with domestication. Effects of selective breeding, physical and social environments, and developmental stage on social organization, aggressive behavior, sexual behavior, productivity, and training of domestic animals. (Typically offered: Fall)

**ANSC 3282. Livestock Judging and Selection. 2 Hours.**

Comparative judging, including grading, classification, and selection of beef cattle, swine, sheep and horses. Oral and written discussion. Laboratory 6 hours per week. Prerequisite: ANSC 1033 or ANSC 2252L. (Typically offered: Fall)

**ANSC 3291. Livestock Junior Judging Team Activity. 1 Hour.**

Training for membership on judging teams, through participation. (Typically offered: Spring)

**ANSC 3333. Diseases of Livestock. 3 Hours.**

Introductory study of the diseases of farm animals with emphasis on fundamental principles of disease, body defense mechanisms, hygiene, and sanitation. Prerequisite: BIOL 1543 and ANSC 2333. (Typically offered: Spring)

**ANSC 3433. Fundamentals of Reproductive Physiology. 3 Hours.**

Principles of mammalian reproductive physiology with emphasis on farm animals. Lecture 3 hours per week. Pre- or Corequisite: ((CHEM 1073 and CHEM 1071L) or (CHEM 1123 and CHEM 1121L) or (CHEM 2613 and CHEM 2611L) or (CHEM 3603 and CHEM 3601L)) and junior standing. Prerequisite: BIOL 1543. (Typically offered: Fall)

**ANSC 3491L. Artificial Insemination in Cattle. 1 Hour.**

Experience with artificial insemination technique in cattle including estrus detection, semen storage and handling, insemination equipment maintenance and technique. Laboratory 4 hours per week. The course is offered the second 8 weeks of the spring semester. Pre- or Corequisite: ANSC 3433 or instructor consent. (Typically offered: Fall)

**ANSC 3513. Current Approaches in Agricultural Laboratory Research. 3 Hours.**

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)

This course is cross-listed with POSC 3513.

**ANSC 3513H. Honors Current Approaches in Agricultural Laboratory Research. 3 Hours.**

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543 and honors standing. (Typically offered: Spring Even Years)

This course is cross-listed with POSC 3513, ANSC 3513.

**ANSC 3613. Meat Science. 3 Hours.**

The study of meat science and muscle biology. Topics will include animal/tissue growth and development and the relationship to meat quality. Meat processing, preservation, and meat safety concerns will also be considered. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603. (Typically offered: Spring)

**ANSC 3723. Horse and Livestock Merchandising. 3 Hours.**

Various types of merchandising programs for specific livestock enterprises will be presented. Students will evaluate the effectiveness of merchandising programs including how to organize, advertise, and manage a purebred auction sale of livestock. (Typically offered: Fall)

**ANSC 3753. Equine Assisted Activities and Therapies. 3 Hours.**

Animal Science 3753 introduces students to the field of equine assisted activities and therapies. A variety of approaches, therapeutic settings and client populations will be addressed with an emphasis on equine behavior. Students will gain experience in the practical application of an equine assisted therapy program. (Typically offered: Fall)

**ANSC 3761L. Ranch Horse Riding. 1 Hour.**

This course is designed for students to have the opportunity to practice and/or compete in ranch horse competition as well as experience horseback ranch work. The class will consist mostly of hands-on participation at the Whitaker Arena as well as various competition and ranch sites around the region and country. Students will learn the value of the horse in livestock production as well as the competition portion of the equine industry. The Ranch Horse Team is a flagship for the University of Arkansas, Bumper's College Department of Animal Science. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

**ANSC 3773. Equine Behavior. 3 Hours.**

Students will be introduced to equine behavior and its application to equine management and training. Course will cover identifying behaviors, senses and memory of the horse, horse-human interaction, how horses learn, the application of classical conditioning and equine welfare. (Typically offered: Summer)

**ANSC 400V. Special Problems. 1-6 Hour.**

Special problems in the animal sciences for advanced undergraduate students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

**ANSC 401V. Internship in Animal Sciences. 1-6 Hour.**

Supervised work experience with private or government organizations Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

**ANSC 4072. Advanced Equine Selection and Evaluation. 2 Hours.**

Advanced evaluation and selection of breeding and show animals, evaluation of breed types and show characteristics. Field trips to breeding operations. Competitive Judging team members come from this course and participation in competitive events will be required. Prior equine evaluation is not necessary, but instructor consent is required. Some Saturday activities. Prerequisite: ANSC 3072 or instructor consent. (Typically offered: Fall)

**ANSC 410V. Special Topics in Animal Sciences. 1-4 Hour.**

Topics not covered in other courses or a more intensive study of specific topics in animal sciences. (Typically offered: Irregular) May be repeated for degree credit.

**ANSC 410VH. Honors Special Topics in Animal Sciences. 1-4 Hour.**

Topics not covered in other courses or a more intensive study of specific topics in animal sciences. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.

This course is equivalent to ANSC 410V.

**ANSC 4123. Legal Issues in Animal Agriculture. 3 Hours.**

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation- from local to state to federal, depending on the issue- will be studied and discussed. (Typically offered: Spring Odd Years)

This course is cross-listed with AGECE 4123, POSC 4123.

**ANSC 4142. Advanced Animal Handling Techniques. 2 Hours.**

This course is designed to familiarize students with handling techniques of a variety of animals, including cattle, sheep, horses, pigs, dogs, and others. Students will learn and practice handling, restraint, and common husbandry procedures with a variety of domestic species. The course will provide valuable preparation for careers in livestock management, vet medicine, animal-based research, and other fields in animal science. Prerequisite: Junior standing or consent. (Typically offered: Fall and Spring)

**ANSC 4163. Companion Animal Nutrition. 3 Hours.**

This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring)

This course is cross-listed with POSC 4163.

**ANSC 4173. Thoroughbred Horse Industry. 3 Hours.**

This course is designed to give you an overview of the Thoroughbred breed and industry. Students will gain an understanding of the Thoroughbred industry, its history, and modern practices. Students will also gain an understanding of career potential in the Thoroughbred industry. Prerequisite: Instructor consent and Junior or Senior standing. (Typically offered: Spring Odd Years)

**ANSC 4181. Kentucky Thoroughbred Tour. 1 Hour.**

An overview of the Thoroughbred industry in central Kentucky through visiting major racetracks, world-class Thoroughbred breeding facilities, major equine veterinary practices, world class equine sales facilities, equine rehabilitation and retirement facilities, equine nutritional research facilities, and visit with horse trainers, veterinarians and farm managers. Successful completion of all course requirements and the tours will enable students to obtain 1 credit in animal science, network in the equine industry and critically assess potential careers. Prerequisite: Instructor consent. (Typically offered: Summer Odd Years)

**ANSC 4252. Cow-Calf Management. 2 Hours.**

Systems of cow-calf management including the practical application of the principles of breeding, feeding, and management to commercial and purebred beef cattle under Arkansas conditions. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall)

**ANSC 4262. Swine Production. 2 Hours.**

Methods in producing purebred and commercial swine with specific emphasis on the management programs needed for profitable pork production in Arkansas. Prerequisite: Must be a student in Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall Even Years)

**ANSC 4272. Sheep Production. 2 Hours.**

Purebred and commercial sheep management emphasizing the programs of major importance in lamb and wool production in Arkansas. Prerequisite: Must be a student in Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Spring)

**ANSC 4282. Horse Production. 2 Hours.**

Production, use and care of horses and ponies including breeding, feeding, handling, and management. Lecture 1 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Junior standing or higher. (Typically offered: Spring)

**ANSC 4291. Livestock Senior Judging Team Activity. 1 Hour.**

Training for membership on judging teams, through participation. (Typically offered: Fall)

**ANSC 4303. Comparative Veterinary Anatomy. 3 Hours.**

Study of structures and principles of anatomy of major domestic species. The dog, horse, and cow will be used as models for anatomical structures and the application of anatomical knowledge in animal science; focus on veterinary applications. 3 hours of lecture each week. Spring semesters. Corequisite: Lab component. Prerequisite: ANSC 1033 or BIOL 1543, junior standing or instructor consent. (Typically offered: Fall and Spring)

**ANSC 4452. Milk Production. 2 Hours.**

Principles of breeding, feeding, and management of dairy cattle will be studied. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall Odd Years)

**ANSC 4482. Companion Animal Management. 2 Hours.**

The study and application of principles of domestication, nutrition, reproduction, parasitology, diseases, behavior, and husbandry management to companion animals. Dogs, cats, and exotic animals will be the species of primary interest. Practical problems of care and management of these species will be solved. Prerequisite: BIOL 1543 or equivalent or consent of instructor. (Typically offered: Spring)

**ANSC 4553. Forage-Ruminant Relations. 3 Hours.**

Chemical, physical, and botanical characteristics of forage plants, the dynamics of grazing, intake, digestion, behavior, and nutrient cycling at the plant-animal interface. CSES 1203 recommended. Corequisite: Lab component. Prerequisite: ANSC 3143. (Typically offered: Fall Even Years)

**ANSC 4613. Muscle Growth and Development. 3 Hours.**

This is an undergraduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular, and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 3033 and(or) CHEM 3813 are recommended as a prerequisite(s). (Typically offered: Fall) This course is cross-listed with POSC 4613.

**ANSC 4652. Stocker-Feedlot Cattle Management. 2 Hours.**

Production and management systems for stocker and feed-lot cattle including practical applications of forage systems, feeding, health management and economics of production of these livestock. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall)

**ANSC 4662. Comparative Studies in Panamanian and US Agricultural Practices. 2 Hours.**

An experiential-learning course with an embedded trip to Panama designed to give students an overview of the agricultural industry and the impact of Panamanian history, culture and geography on agriculture and how this contrasts with practices in the US. Students will participate in a study tour to Panama where they will engage in learning experiences that explore the agriculture, history, and culture of this country. They will have the opportunity to visit and learn from successful producers of livestock and agricultural staples as well as tour the Panama canal and learn about Panamanian culture and history. Prerequisite: Instructors consent and approval from Study Abroad office. (Typically offered: Spring)

**ANSC 4923. Brain & Behavior. 3 Hours.**

Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory systems and the autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003 or BIOL 2213 or BIOL 2443 or BIOL 2533. (Typically offered: Fall) This course is cross-listed with POSC 4923.

**ANSC 4993. Animal Science Capstone. 3 Hours.**

The purpose of this course is to provide students with an opportunity to apply and integrate knowledge from previous coursework in general education and animal science. This course is a multiple experience/ exercise capstone course and is designed for students to demonstrate mastery of a particular subject within Animal Science. Students will provide evidence of integrated knowledge through a variety of means including oral presentations, creation of a 1250-word reflective essay, writing a research abstract and applying problem solving and critical thinking skills. Prerequisite: Senior standing. (Typically offered: Fall and Spring)