

# 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 10051 University Perspectives	
<b>Communications</b>	<b>12</b>
ENGL 10103	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023)	

Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) SPCH 10003 is required for most Schools of Veterinary Medicine; Recommend ACOM 31403, AGED 41203, or SPCH 10003 to fulfill Learning Outcome 1.2. Recommend AGED 41203 or SPCH 10003 to fulfill Learning Outcome 5.1.

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

HIST 20003 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 11003 College Algebra (ACTS Equivalency = MATH 1103)**

### Biological Sciences **8**

**BIOL 10103 Principles of Biology (ACTS Equivalency = & BIOL 10101 BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)**

BIOL 20003 General Microbiology (ACTS Equivalency = BIOL & BIOL 20001 2004 Lecture)  
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)  
or ANSC 2413 Domestic Animal Microbiology  
& ANSC 2414 and Domestic Animal Microbiology Laboratory

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

**CHEM 12103 Fundamentals of Chemistry (ACTS Equivalency & CHEM 12101= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)**

or **CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM & CHEM 14101 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)**

Select 4 hours from the following:

CHEM 14203 University Chemistry II (ACTS Equivalency = & CHEM 14201 CHEM 1424 Lecture)  
and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

CHEM 26103 Organic Physiological Chemistry (ACTS & CHEM 26101 Equivalency = CHEM 1224 Lecture)  
and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)

CHEM 36053 Organic Chemistry I  
& CHEM 36001 and Organic Chemistry I Laboratory

ENTO 10203 Insects, Science and Society  
& ENTO 10201 and Insects, Science and Society Lab

ENSC 10003 Environmental Science  
& ENSC 10001 and Environmental Science Laboratory

PHYS 20103 College Physics I (ACTS Equivalency = PHYS & PHYS 20101 2014 Lecture)  
and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)

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

Select 3 hours Fine Arts and 3 hours Humanities from State Minimum Core (see student degree audit for course list).

**Social Sciences 9**

Select 9 hours Social Sciences courses from State Minimum Core (see student degree audit for course list).

**Animal Science Core Requirements (31 hours)**

ANSC 10303	Introductory Animal Sciences	3
ANSC 17801	Career Preparation and Development	1
ANSC 21133 & ANSC 21131	Introduction to Animal Evaluation and Handling and Introduction To Animal Evaluation and Handling Lab	4
ANSC 31203	Principles of Genetics	3
	or ANSC 31303 Animal Breeding and Genetics	
ANSC 31433 & ANSC 31431	Principles of Animal Nutrition and Animal Nutrition Laboratory	4
ANSC 32103	Behavior of Domestic Animals	3
ANSC 30303	Animal Physiology	3
ANSC 34303	Fundamentals of Reproductive Physiology	3
ANSC 49903	Animal Science Capstone	3

Select 4 hours from the following: 4

ANSC 42502	Cow-Calf Management	
ANSC 42602	Swine Production	
ANSC 42702	Sheep Production	
ANSC 42802	Horse Production	
ANSC 44502	Milk Production	
ANSC 44802	Companion Animal Management	
ANSC 46502	Stocker-Feedlot Cattle Management	
ANSC 46602	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 4100V	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 (21 hours)**

ANSC 30702	Equine Selection and Evaluation ((ANSC 37601 - Ranch Horse Randing must be taken twice to fulfill this requirement))	2
	or ANSC 32802 Livestock Judging and Selection	
	or ANSC 37601 Ranch Horse Riding	
ANSC 41603	Companion Animal Nutrition	3
	or ANSC 45503 Forage-Ruminant Relations	
AGEC 33003	Food and Agricultural Marketing	3
	or ANSC 37203 Horse and Livestock Merchandising	
ANSC 23303	Introduction to Animal Health	3
	or ANSC 30003 Applied Animal Parasitology	
	or ANSC 30103 Parasitisms of Domesticated Non-Herbivores	
	or ANSC 33303 Diseases of Livestock	
	or ANSC 36103 Meat Science	
Select 4 hours from the following		4
ANSC 42502	Cow-Calf Management	

ANSC 42602	Swine Production	
ANSC 42702	Sheep Production	
ANSC 42802	Horse Production	
ANSC 44502	Milk Production	
ANSC 44802	Companion Animal Management	
ANSC 46502	Stocker-Feedlot Cattle Management	
ANSC 46602	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 4100V	Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))	
Select 6 hours from the following:		6
ANSC 20003	Introduction to Equine Industry	
AGEC 21403	Agribusiness Financial Records	
AGEC 34003	Farm Business Management	
CSES 12003	Introduction to Plant Sciences	
ASTM 29003	Agricultural and Human Environmental Sciences Applications of Microcomputers	
FDSC 25203	Sanitation and Safety in Food Processing Operations	

**Total Hours 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/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program. (\*See degree audit in UACconnect for complete course list.)

First Year	Units	
	Fall	Spring
UNIV 10051 University Perspectives	1	
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
ANSC 10303 Introductory Animal Sciences	3	
BIOL 10103 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 10101 Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) (Satisfies General Education Outcome 3.4)	4	
MATH 11003 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)	3	
ANSC 17801 Career Preparation and Development	1	
CHEM 12103 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & CHEM 12101 Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) (Satisfies General Education Outcome 3.4)	4	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)	3	

ANSC 21133 Introduction to Animal Evaluation and Handling	4	
& ANSC 21131 Introduction To Animal Evaluation and Handling Lab		
General Elective	3	
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2 & 5.1) <sup>2,3</sup>	3	
Year Total:	15	17

<b>Second Year</b>		<b>Units</b>
	<b>Fall</b>	<b>Spring</b>

BIOL 20003 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 20001 General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) or ANSC 24133 and ANSC 24131	4	
Choose 1-3 hours from the following:	1-3	
ANSC 32802 Livestock Judging and Selection <sup>5</sup>		
ANSC 37601 Ranch Horse Riding		
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>2,3</sup>		
ANET Concentration Elective or History Core Elective (Satisfies General Education Outcome 4.2)	3	
ANSC 32103 Behavior of Domestic Animals	3	
Chemical or Physical Sciences Elective	4	
Choose 1-3 hours from the following: <sup>6</sup>	1-3	
ANSC 30702 Equine Selection and Evaluation		
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>2,3</sup>		
ANSC 37601 Ranch Horse Riding (OR General Elective) <sup>7</sup>		
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2) or ANET Concentration Elective	3	
Social Science Core Elective (Satisfies General Education Outcome 3.3)	3	
Communication Intensive Elective (Satisfies General Education Outcome 1.2) <sup>1</sup>	3	
General Elective	3-4	
Year Total:	17	14

<b>Third Year</b>		<b>Units</b>
	<b>Fall</b>	<b>Spring</b>

General Elective	3	
ANSC 34303 Fundamentals of Reproductive Physiology	3	
ANSC 31433 Principles of Animal Nutrition & ANSC 31431 Animal Nutrition Laboratory	4	
ANSC 31203 Principles of Genetics (OR ANET Concentration Elective (must take ANSC 31203 if not planning to take ANSC 31303 in Spring Year 3))	3	

ANSC 37203 Horse and Livestock Merchandising	3	
Social Science State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>4</sup>		3
Communication Intensive Elective (Satisfies General Education Outcome 5.1) <sup>1</sup>		3
ANSC 30303 Animal Physiology		3
ANSC 31303 Animal Breeding and Genetics (OR ANET Concentration Elective (must take ANSC 31303 if ANSC 31203 not taken in Fall Year 3))		3
ANET Concentration Elective and/or General Elective		4
Year Total:	16	16

<b>Fourth Year</b>		<b>Units</b>
	<b>Fall</b>	<b>Spring</b>

ANSC Core Elective and/or General Elective	4	
ANSC 45503 Forage-Ruminant Relations (OR ANET Concentration Elective) <sup>8</sup>	3	
General Electives and/or ANET Concentration Elective	4	
Social Science State Minimum Core Elective (Satisfies General Education Outcome 3.3)	3	
ANSC 41603 Companion Animal Nutrition (OR ANET Concentration Elective (must take ANSC 41603 if ANSC 45503 not taken in Fall Year 4))		3
General Electives and/or ANSC Core Electives		4-8
ANSC 49903 Animal Science Capstone (Satisfies General Education Outcome 6.1)		3
Year Total:	14	11

**Total Units in Sequence: 120**

<sup>1</sup> Recommend SPCH 10003 or AGED 41203 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. SPCH 10003 is required for most Schools of Veterinary Medicine. The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 100H3, MUSC 10103, MUSC 101H3, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.

<sup>2</sup> The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 10103, MUSC 101H3, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.

<sup>3</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 10003, CLST 100H3, CLST 10103, HUMN 112H4, PHIL 20003, PHIL 200H3, or PHIL 21003.

<sup>4</sup> The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 10203, COMM 10203, HDFS 14003, HDFS 24103, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20903, HUMN 111H4, HUMN 211H4, INST 28103, INST 281H3, PLSC 20103, PLSC 28103, PLSC 281H3, RESM 28503, SOCI 10103, SOCI 101H3, or SOCI 20103.

<sup>5</sup> Must take ANSC 32802 or ANSC 37601 if not planning to take ANSC 30702 or ANSC 37601 in Spring Year 2.

<sup>6</sup> Must take ANSC 32802 or ANSC 37601 if Fine Arts/Humanities taken in Fall Year 2.

<sup>7</sup> Only choose ANSC 37601 if 1st hour taken in Fall Year 2.

<sup>8</sup> Must take ANSC 45503 if not planning to take ANSC 41603 in Spring Year 4.

## 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 10051 University Perspectives	
<b>Communications</b>	<b>12</b>
ENGL 10103	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023)	
Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) SPCH 10003 is required for most Schools of Veterinary Medicine; Recommend ACOM 31403, AGED 41203, or SPCH 10003 to fulfill Learning Outcome 1.2. Recommend AGED 41203 or SPCH 10003 to fulfill Learning Outcome 5.1.	
<b>U.S. History or Government</b>	<b>3</b>
HIST 20003 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 11003 College Algebra (ACTS Equivalency = MATH 1103)</b>	
<b>Biological Sciences</b>	<b>8</b>
<b>BIOL 10103 Principles of Biology (ACTS Equivalency = &amp; BIOL 10101 BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</b>	
BIOL 20003 General Microbiology (ACTS Equivalency = BIOL & BIOL 20001 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)	
or ANSC 24103 Domestic Animal Microbiology & ANSC 24104 Domestic Animal Microbiology Laboratory	
<b>Chemical and Physical Sciences</b>	<b>8</b>
<b>CHEM 12103 Fundamentals of Chemistry (ACTS Equivalency &amp; CHEM 12101= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)</b>	
or CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM & CHEM 14104 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)	

Select 4 hours from the following:

CHEM 14203 University Chemistry II (ACTS Equivalency = & CHEM 14201 CHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

CHEM 26103 Organic Physiological Chemistry (ACTS & CHEM 26101 Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)

CHEM 36053 Organic Chemistry I & CHEM 36001 and Organic Chemistry I Laboratory

ENTO 10203 Insects, Science and Society & ENTO 10201 and Insects, Science and Society Lab

ENSC 10003 Environmental Science & ENSC 10001 and Environmental Science Laboratory

PHYS 20103 College Physics I (ACTS Equivalency = PHYS & PHYS 20101 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)

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

Select 3 hours Fine Arts and 3 hours Humanities from State Minimum Core (see student degree audit for course list).

### Social Sciences **9**

Select 9 hours Social Sciences courses from State Minimum Core (see student degree audit for course list).

### Animal Science Core Requirements (31 hours)

ANSC 10303 Introductory Animal Sciences	3
ANSC 17801 Career Preparation and Development	1
ANSC 21133 Introduction to Animal Evaluation and Handling & ANSC 21131 and Introduction To Animal Evaluation and Handling Lab	4
ANSC 31203 Principles of Genetics or ANSC 31303 Animal Breeding and Genetics	3
ANSC 31433 Principles of Animal Nutrition & ANSC 31431 and Animal Nutrition Laboratory	4
ANSC 32103 Behavior of Domestic Animals	3
ANSC 30303 Animal Physiology	3
ANSC 34303 Fundamentals of Reproductive Physiology	3
ANSC 49903 Animal Science Capstone	3
Select 4 hours from the following:	4
ANSC 42502 Cow-Calf Management	
ANSC 42602 Swine Production	
ANSC 42702 Sheep Production	
ANSC 42802 Horse Production	
ANSC 44502 Milk Production	
ANSC 44802 Companion Animal Management	
ANSC 46502 Stocker-Feedlot Cattle Management	
ANSC 46602 Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 4100V 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 Pre-Professional Science Concentration

### Pre-Professional Requirements (20-21 hours)

CHEM 38103	Elements of Biochemistry	3
CHEM 36203 & CHEM 36201	Organic Chemistry II and Organic Chemistry II Laboratory	4
BIOL 10503 & BIOL 10501	Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture) and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab)	3-4
	or BIOL 25473 Cell Biology	
PHYS 20103 & PHYS 20101	College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	4
PHYS 20203 & PHYS 20201	College Physics II (ACTS Equivalency = PHYS 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 42502	Cow-Calf Management	
ANSC 42602	Swine Production	
ANSC 42702	Sheep Production	
ANSC 42802	Horse Production	
ANSC 44502	Milk Production	
ANSC 44802	Companion Animal Management	
ANSC 46502	Stocker-Feedlot Cattle Management	
ANSC 46602	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 4100V	Special Topics in Animal Sciences (Study Abroad to New Zealand or Australia)	

**Total Hours** **21**

## 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.)

	Units	
	Fall	Spring
UNIV 10051 University Perspectives	1	
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
ANSC 10303 Introductory Animal Sciences	3	
MATH 11003 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)	3	

BIOL 10103 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 10101 Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) (Satisfies General Education Outcome 3.4)	4	
ANSC 17801 Career Preparation and Development	1	
ENGL 10203 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 21133 Introduction to Animal Evaluation and Handling & ANSC 21131 Introduction To Animal Evaluation and Handling Lab		4
General Elective (recommended ANSC 10602 Sustainable Integrated Small Animal Farming)		2
CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & CHEM 14101 University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) (Satisfies General Education Outcome 3.4)		4
<b>Year Total:</b>	<b>15</b>	<b>16</b>

	Units	
	Fall	Spring
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>1</sup>	3	
CHEM 14203 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & CHEM 14201 University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)	4	
ANSC 32103 Behavior of Domestic Animals	3	
BIOL 20003 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 20001 General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) or ANSC 24133 and ANSC 24131	4	
General Elective		1
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)		3
General Elective (Recommend MATH 11003)		3
Social Sciences Core Elective (Satisfies General Education Outcome 3.3)		3
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2 & 5.1) <sup>2,3</sup>		3
CHEM 36053 Organic Chemistry I & CHEM 36001 Organic Chemistry I Laboratory		4
<b>Year Total:</b>	<b>15</b>	<b>16</b>

	Units	
	Fall	Spring
ANSC 34303 Fundamentals of Reproductive Physiology	3	

ANSC 31433 Principles of Animal Nutrition & ANSC 31431 Animal Nutrition Laboratory	4	
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>1</sup>	3	
CHEM 36203 Organic Chemistry II & CHEM 36201 Organic Chemistry II Laboratory	4	
Social Sciences Core Elective (Satisfies General Education Outcome 3.3 and 4.1) <sup>4</sup>	3	
ANSC Core Elective	2-4	
ANSC 30303 Animal Physiology	3	
CHEM 38103 Elements of Biochemistry	3	
General Elective	2-4	
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2 & 5.1) <sup>2,3</sup>	3	
Year Total:	17	15

Fourth Year	Units	
	Fall	Spring
ANSC 31203 Principles of Genetics or ANSC 31303 Animal Breeding and Genetics	3	
ANSC Core Elective or General Elective	4	
BIOL 10503 Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture) & BIOL 10501 Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab) or BIOL 25473 Cell Biology	4	
PHYS 20103 College Physics I (ACTS Equivalency = PHYS 2014 Lecture) & PHYS 20101 College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	4	
ANSC 49903 Animal Science Capstone (Satisfies General Education Outcome 6.1)		3
General Electives (Recommend MATH 21003)		3-4
PHYS 20203 College Physics II (ACTS Equivalency = PHYS 2024 Lecture) & PHYS 20201 College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)		4
Year Total:	15	11
<b>Total Units in Sequence:</b>		<b>120</b>

<sup>1</sup> Recommend SPCH 10003 or AGED 41203 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. SPCH 10003 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 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 100H3, MUSC 10103, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.

<sup>3</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 10003, CLST 100H3, CLST 10103, HUMN 112H4, PHIL 20003, PHIL 200H3, or PHIL 21003.

<sup>4</sup> The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 10203, COMM 10203, HDFS 14003, HDFS 24103, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20903, HUMN 111H4, HUMN 211H4, INST 28103,

INST 281H3, PLSC 20103, PLSC 28103, PLSC 281H3, RESM 28503, SOCI 10103, SOCI 101H3, or SOCI 20103.

## 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 10051 University Perspectives	
<b>Communications</b>	<b>12</b>
ENGL 10103	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023)	
Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) SPCH 10003 is required for most Schools of Veterinary Medicine; Recommend ACOM 31403, AGED 41203, or SPCH 10003 to fulfill Learning Outcome 1.2. Recommend AGED 41203 or SPCH 10003 to fulfill Learning Outcome 5.1.	
<b>U.S. History or Government</b>	<b>3</b>
HIST 20003 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 11003 College Algebra (ACTS Equivalency = MATH 1103)</b>	
<b>Biological Sciences</b>	<b>8</b>
<b>BIOL 10103 Principles of Biology (ACTS Equivalency = &amp; BIOL 10101 BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</b>	
BIOL 20003 General Microbiology (ACTS Equivalency = BIOL & BIOL 20001 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) or ANSC 24103 Domestic Animal Microbiology & ANSC 24101 and Domestic Animal Microbiology Laboratory	
<b>Chemical and Physical Sciences</b>	<b>8</b>
<b>CHEM 12103 Fundamentals of Chemistry (ACTS Equivalency &amp; CHEM 12101= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)</b> or CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM & CHEM 14101= CHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)	
Select 4 hours from the following:	
CHEM 14203 University Chemistry II (ACTS Equivalency = & CHEM 14201 CHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)	

CHEM 26103 Organic Physiological Chemistry (ACTS & CHEM 26101 Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)	
CHEM 36053 Organic Chemistry I & CHEM 36001 and Organic Chemistry I Laboratory	
ENTO 10203 Insects, Science and Society & ENTO 10201 and Insects, Science and Society Lab	
ENSC 10003 Environmental Science & ENSC 10001 and Environmental Science Laboratory	
PHYS 20103 College Physics I (ACTS Equivalency = PHYS & PHYS 20101 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	
<b>Fine Arts and Humanities</b>	<b>6</b>
Select 3 hours Fine Arts and 3 hours Humanities from State Minimum Core (see student degree audit for course list).	
<b>Social Sciences</b>	<b>9</b>
Select 9 hours Social Sciences courses from State Minimum Core (see student degree audit for course list).	
<b>Animal Science Core Requirements (31 hours)</b>	
ANSC 10303 Introductory Animal Sciences	3
ANSC 17801 Career Preparation and Development	1
ANSC 21133 Introduction to Animal Evaluation and Handling & ANSC 21131 and Introduction To Animal Evaluation and Handling Lab	4
ANSC 31203 Principles of Genetics or ANSC 31303 Animal Breeding and Genetics	3
ANSC 31433 Principles of Animal Nutrition & ANSC 31431 and Animal Nutrition Laboratory	4
ANSC 32103 Behavior of Domestic Animals	3
ANSC 30303 Animal Physiology	3
ANSC 34303 Fundamentals of Reproductive Physiology	3
ANSC 49903 Animal Science Capstone	3
Select 4 hours from the following:	4
ANSC 42502 Cow-Calf Management	
ANSC 42602 Swine Production	
ANSC 42702 Sheep Production	
ANSC 42802 Horse Production	
ANSC 44502 Milk Production	
ANSC 44802 Companion Animal Management	
ANSC 46502 Stocker-Feedlot Cattle Management	
ANSC 46602 Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 4100V 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 20003 Introduction to Equine Industry	3
ANSC 37203 Horse and Livestock Merchandising	3
ANSC 42802 Horse Production	2
ANSC 23303 Introduction to Animal Health or ANSC 30003 Applied Animal Parasitology or ANSC 33303 Diseases of Livestock	3
Select 10 hours from the following:	10
ANSC 23003 Introduction to Horsemanship	
ANSC 30702 Equine Selection and Evaluation	
ANSC 37503 Equine Assisted Activities and Therapies	
ANSC 37601 Ranch Horse Riding	
ANSC 41203 Legal Issues in Animal Agriculture	
ANSC 41603 Companion Animal Nutrition	
ANSC 41703 Thoroughbred Horse Industry	
ANSC 43003 Comparative Veterinary Anatomy	
ANSC 45503 Forage-Ruminant Relations	

**Total Hours** **21**

## 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 10051 University Perspectives	1	
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
ANSC 10303 Introductory Animal Sciences	3	
MATH 11003 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)	3	
BIOL 10103 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 10101 Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) (Satisfies General Education Outcome 3.4)	4	
ANSC 17801 Career Preparation and Development	1	
ANSC 20003 Introduction to Equine Industry		3
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3
General Elective		2
ANSC 21133 Introduction to Animal Evaluation and Handling & ANSC 21131 Introduction To Animal Evaluation and Handling Lab		4

CHEM 12103 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & CHEM 12101 Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) (Satisfies General Education Outcome 3.4)	4	
Year Total:	15	16

**Second Year**

	Fall	Spring
BIOL 20003 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) & BIOL 20001 General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) or ANSC 24133 and ANSC 24131	4	
ANSC 32103 Behavior of Domestic Animals	3	
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)	3	
Equine Systems Elective* and/or General Elective	3	
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3 and 4.1) <sup>4</sup>	3	
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>1</sup>		3
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2 & 5.1) <sup>2,3</sup>		3
Equine Systems Elective* and/or General Elective	3	
Chemistry or Physical Science Elective*	4	
General Elective	3	
Year Total:	16	16

**Third Year**

	Fall	Spring
ANSC 34303 Fundamentals of Reproductive Physiology	3	
ANSC 31433 Principles of Animal Nutrition & ANSC 31431 Animal Nutrition Laboratory	4	
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2 & 5.1) <sup>2,3</sup>	3	
ANSC 37203 Horse and Livestock Merchandising	3	
Equine Systems Elective*	3	
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3)		3
ANSC 31303 Animal Breeding and Genetics (OR Social Sciences Core Elective (Satisfies General Education Outcome 3.3)) <sup>4,6</sup>		3
ANSC 30303 Animal Physiology		3
ANSC 42802 Horse Production		2
Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) <sup>1</sup>		3
Year Total:	16	14

**Fourth Year**

	Fall	Spring
ANSC Core Elective*	2-4	
General Elective	5-7	
ANSC 31203 Principles of Genetics (OR Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>4,5</sup>	3	
ANSC 49903 Animal Science Capstone (Satisfies General Education Outcome 6.1)	3	
ANSC Core Elective*		2-4
General Electives		6-8
Equine Systems Electives		4
Year Total:	15	12

**Total Units in Sequence:****120**

<sup>1</sup> Recommend SPCH 10003 or AGED 41203 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. SPCH 10003 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 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10103, MUSC 101H3, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.

<sup>3</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 10003, CLST 100H3, CLST 10103, HUMN 112H4, PHIL 20003, PHIL 200H3, or PHIL 21003.

<sup>4</sup> The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 10203, COMM 10203, HDFS 14003, HDFS 24103, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20903, HUMN 111H4, HUMN 211H4, INST 28103, INST 281H3, PLSC 20103, PLSC 28103, PLSC 281H3, RESM 28503, SOCI 10103, SOCI 101H3, or SOCI 20103.

<sup>5</sup> ANSC 31203 must be taken if ANSC 31303 not taken in Spring Year 3.

<sup>6</sup> ANSC 31303 must be taken if ANSC 31203 will not be taken in Fall Year 4.

**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:

**Core Requirements****14**

ANSC 10303	Introductory Animal Sciences
ANSC 30303	Animal Physiology
ANSC 31303	Animal Breeding and Genetics
	or ANSC 34: Fundamentals of Reproductive Physiology
ANSC 31433	Principles of Animal Nutrition
ANSC 42802	Horse Production

**Core Equine Electives:****6**

ANSC 23003	Introduction to Horsemanship
ANSC 30702	Equine Selection and Evaluation



ANSC 37203	Horse and Livestock Merchandising	
ANSC 4010V	Internship in Animal Sciences	
ANSC 41203	Legal Issues in Animal Agriculture	
ANSC 41703	Thoroughbred Horse Industry	

**Total Hours** **20**

## 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 10303	Introductory Animal Sciences	3
ANSC 21133	Introduction to Animal Evaluation and Handling	3

### Category 2 6

Select 6 hours from the following:

ANSC 30303	Animal Physiology	
ANSC 31203	Principles of Genetics	
ANSC 31303	Animal Breeding and Genetics	
ANSC 31433	Principles of Animal Nutrition	
ANSC 34303	Fundamentals of Reproductive Physiology	
ANSC 36103	Meat Science	

### Category 3 2

Select 2 hours from the following:

ANSC 42502	Cow-Calf Management	
ANSC 42602	Swine Production	
ANSC 42702	Sheep Production	
ANSC 42802	Horse Production	
ANSC 44502	Milk Production	
ANSC 44802	Companion Animal Management	
ANSC 46502	Stocker-Feedlot Cattle Management	
ANSC 46602	Comparative Studies in Panamanian and US Agricultural Practices	
ANSC 4100V	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 20003	Introduction to Equine Industry	3
ANSC 37203	Horse and Livestock Merchandising	3
ANSC 37703	Equine Behavior	3

**Total Hours** **9**

## 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, Brittini 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 10301. 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 10303. 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 103H3. 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)

### **ANSC 10602. 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)

### **ANSC 17801. 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 20003. 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 21131. 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 21133 (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 10303. (Typically offered: Fall and Spring)

### **ANSC 21133. 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 21131 (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 10303. (Typically offered: Fall and Spring)

### **ANSC 22502. 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 23003. 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 23303. 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 10103 and sophomore standing. (Typically offered: Fall)

### **ANSC 24131. 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 24133. (Typically offered: Fall)

### **ANSC 24133. 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 24131. Prerequisite: (BIOL 10103 and BIOL 10101) and (CHEM 12103 or CHEM 14103 or CHEM 14203). (Typically offered: Fall)

### **ANSC 30003. 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 30103. 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 30303. 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 10103 and (CHEM 14203 or CHEM 12103). (Typically offered: Spring)

### **ANSC 30702. 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 31203. Principles of Genetics. 3 Hours.**

Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 10103 and MATH 11003 or higher. (Typically offered: Fall)

### **ANSC 31303. 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 11003 or higher. (Typically offered: Spring)

### **ANSC 31431. 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 31433 for ANSC majors only. Prerequisite: MATH 11003. (Typically offered: Fall)

**ANSC 31433. 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 31431 (only a corequisite for students majoring in Animal Science). Prerequisite: ANSC 10303. (Typically offered: Fall)

**ANSC 32103. 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: Spring)

**ANSC 32802. 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 10303 or ANSC 22502. (Typically offered: Fall)

**ANSC 32901. Livestock Junior Judging Team Activity. 1 Hour.**

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

**ANSC 33303. 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 10103 and ANSC 23303. (Typically offered: Spring)

**ANSC 34303. 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 12103 and CHEM 12101) or (CHEM 14203 and CHEM 14201) or (CHEM 26103 and CHEM 26101) or (CHEM 36053 and CHEM 36001)) and junior standing. Prerequisite: BIOL 10103. (Typically offered: Fall)

**ANSC 34901. 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 34303 or instructor consent. (Typically offered: Fall)

**ANSC 351H3. 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 10103 and honors standing. (Typically offered: Spring Even Years)

**ANSC 36103. 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. (Typically offered: Spring)

**ANSC 37203. 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 37503. 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 37601. 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 37703. 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 4000V. 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 4010V. 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 40702. 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 30702 or instructor consent. (Typically offered: Fall)

**ANSC 4100V. 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 410HV. 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 4100V.

**ANSC 41203. 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)

**ANSC 41402. 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 41603. 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 31433 or POSC 43403. (Typically offered: Spring)

**ANSC 41703. 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 41801. 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 42502. 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 10303 and Junior standing or higher. (Typically offered: Fall)

**ANSC 42602. 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 10303 and Junior standing or higher. (Typically offered: Fall Even Years)

**ANSC 42702. 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 10303 and Junior standing or higher. (Typically offered: Spring)

**ANSC 42802. 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 42901. Livestock Senior Judging Team Activity. 1 Hour.**

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

**ANSC 43003. 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 10303 or BIOL 10103, junior standing or instructor consent. (Typically offered: Fall and Spring)

**ANSC 44103. Animal Welfare. 3 Hours.**

This multi-disciplinary course introduces students to the principles and application of animal welfare and will emphasize farm animal welfare and production issues. (Typically offered: Spring)

**ANSC 44502. 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 10303 and Junior standing or higher. (Typically offered: Fall Odd Years)

**ANSC 44802. 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 10103 or equivalent or consent of instructor. (Typically offered: Spring)

**ANSC 45503. 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 12003 recommended. Corequisite: Lab component. Prerequisite: ANSC 31433. (Typically offered: Fall Even Years)

**ANSC 46103. 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 adipogenesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 30303 and(or) CHEM 38103 are recommended as a prerequisite(s). (Typically offered: Fall)

**ANSC 46502. 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 10303 and Junior standing or higher. (Typically offered: Fall)

**ANSC 46602. 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 49203. 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 30303 or POSC 30303) or PSYC 20003 or BIOL 24103 or BIOL 24003 or BIOL 25473. (Typically offered: Fall)



**ANSC 49903. 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)