

## Animal Science 1: Large Animal Management011004 ...6060

### Course Description

This is a capstone course for the animal systems program of study. The courses is designed to help students utilize the biological principles of animal production to which will influence and affect animal management decisions.

### Course Code:

### Program(s) of Study to which This Course Applies

- Animal Systems

Course Framework	Reference Standards	Academic Crosswalk
<p><b>Standard 1. Students will demonstrate knowledge of the beef industry and the beef best management practices.</b></p>		[TBD by NDE]
<p>Benchmark 1.1 The student will identify and assess current and historical industry trends relative to consumption, production, and marketing.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Graph the consumption trends as compared with other food animal species.</li> <li>• Correlate fluctuations in prices, demand, and consumption to historical situations.</li> <li>• Debate the impact of consumer preferences upon consumption and pricing</li> <li>• Assess the effect food safety issues have on consumer demand.</li> <li>• Explain the reasons for increased beef demand.</li> </ul>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]
<p>Benchmark 1.2 The student will appraise breeds significant to the industry and economy.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Report on beef breeds significant to our county, state, and nation.</li> </ul>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]

<ul style="list-style-type: none"> <li>• Compare registrations of the top five breeds in the U.S.</li> <li>• Discuss why specific breeds are more popular in different regions of the U.S.</li> <li>• Compare and contrast beef breeds based upon performance and management characteristics (e.g. maternal traits, terminal sires, disposition, etc.).</li> <li>• Name the top three cow/calf counties in Nebraska and their corresponding national rank.</li> <li>• Determine Nebraska's rank in beef production.</li> <li>• Rank the top cattle feeding counties in the state.</li> </ul>		
<p>Benchmark 1.3 The student will develop management skills significant to the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Demonstrate the proper technique of tattooing.</li> <li>• Demonstrate proper techniques for vaccination following Beef Quality Assurance standards.</li> <li>• Develop a herd identification system utilizing ear tags, freeze/hot iron brands and/or tattoos.</li> <li>• Estimate a pregnancy due date given a breeding date.</li> <li>• Demonstrate correct implant techniques.</li> <li>• Illustrate castration techniques.</li> <li>• Compare hot iron to freeze branding.</li> <li>• Debate the merits of permanent identification techniques.</li> <li>• Demonstrate the correct procedures to artificially inseminate.</li> <li>• Identify and label anatomical parts of the species.</li> <li>• Match hormones significant to reproduction to the origin of the hormone.</li> <li>• Graph the correlation of hormones to the estrous cycle.</li> <li>• Define and explain the function of pheromones.</li> <li>• List the anatomical systems of the body.</li> <li>• Discuss basic principles of pregnancy diagnosis via rectal palpation in beef cattle.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 1.4 The student will identify the importance of nutrition and its impact upon management and value discovery.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Evaluate the condition score of cows.</li> <li>• Correlate market value based upon a grid marketing system.</li> <li>• Chart profitability based upon days on feed to pounds of product produced.</li> <li>• Compare maturity patterns in various cattle.</li> <li>• Estimate fat thickness, rib-eye area, and kidney, pelvic, and heart (KPH) fat.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>• Estimate feeder cattle frame and muscle scores.</li> <li>• Formulate a balanced ration based upon feedstuffs available in your locale using a Pearson Square.</li> <li>• Construct a least cost balanced ration.</li> <li>• Calculate the Animal Unit Month (AUM) requirements for cattle on range and pasture.</li> <li>• Identify and classify feedstuffs according to nutrient value.</li> <li>• List the essential nutrients and their functions.</li> <li>• Calculate and evaluate feedlot performance measures (e.g. feed intake, daily gain, and feed efficiency).</li> <li>• Differentiate between micro and macro nutrients.</li> <li>• Determine optimal slaughter weights of cattle to optimize marketability.</li> </ul>		
<p>Benchmark 1.5 The student will identify diseases and parasites important to the management in addition to the symptoms and signs of disease and health.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Monitor and determine normal body temperature, pulse rate, and respiration rate.</li> <li>• Match beef diseases to symptoms.</li> <li>• Identify parasites of economic importance to the beef industry.</li> <li>• Determine abiotic and biotic conditions significant to health.</li> <li>• Develop a vaccination plan and calendar for a beef herd.</li> <li>• Develop a parasite control plan.</li> <li>• Collect a fecal sample and identify parasites present.</li> <li>• Correctly read a label and determine precautions.</li> <li>• Correctly use a pistol grip syringe.</li> <li>• Administer correct dosage and location according to product label.</li> <li>• Calculate space requirements for various size and ages of beef cattle.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 1.6 The student will identify and demonstrate equipment crucial to management decisions within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Identify equipment significant to management and production of beef cattle.</li> <li>• Correctly demonstrate artificial insemination techniques.</li> <li>• Correctly demonstrate CIDR implant implementation.</li> <li>• Demonstrate basic usage of ultrasound usage to evaluate carcass composition.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 1.7 The student will select marketing techniques relative to the production cycle and industry trends.</p>	<p>University of Nebraska AniSci 100 and 250</p>	<p>[TBD by NDE]</p>

<p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Compare and contrast various marketing resources available to producers.</li> <li>• Debate benefits and drawbacks to auctions versus private treaty.</li> <li>• Utilize a sliding scale in forward contracts of feeder cattle.</li> <li>• Evaluate carcass market value utilizing a grid marketing system.</li> <li>• Synthesize the benefits of niche marketing on the local and global market (e.g. CAB, Organic, Source &amp; Age verified).</li> <li>• Compare various USDA quality grade cuts of meat.</li> <li>• Compare various USDA Yield grade carcasses.</li> </ul>	Syllabi Modifications	
<p>Benchmark 1.8 The student will identify the organizations and affiliates significant to the industry as well as their function within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Determine the organization responsible for the Beef Check-off.</li> <li>• Determine the organization responsible for certifying Beef Quality Assurance standards.</li> <li>• Describe the programs associated with the Beef Check-off</li> </ul>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]
<p><b>Standard 2. Students will demonstrate knowledge of the swine industry and the swine best management practices.</b></p>		[TBD by NDE]
<p>Benchmark 2.1 The student will identify and assess current and historical industry trends relative to consumption, production, and marketing.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Graph the consumption trends as compared with other food animal species.</li> <li>• Correlate fluctuations in prices, demand, and consumption to historical situations.</li> <li>• Debate the impact of consumer preferences upon consumption and pricing.</li> <li>• Assess the effect food safety issues have on consumer demand.</li> <li>• Explain the reasons for increased pork demand.</li> <li>• Describe the most significantly important portions of a pork carcass.</li> </ul>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]
<p>Benchmark 2.2 The student will appraise breeds significant to the industry and economy.</p> <p><u>Sample performance indicators:</u></p>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]

<ul style="list-style-type: none"> <li>• Report on swine breeds significant to our county, state, and nation.</li> <li>• Determine Nebraska's rank in swine production.</li> <li>• Describe the limited number of breed registrations compared to prior years.</li> <li>• Compare and contrast swine breeds based upon performance and management characteristics (e.g. maternal traits, terminal sires, confinement situations, etc.).</li> </ul>		
<p>Benchmark 2.3 The student will develop management skills significant to the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Demonstrate ear notching.</li> <li>• Demonstrate proper techniques for vaccination following Pork Quality Assurance standards.</li> <li>• Develop a herd identification system utilizing the universal ear notching system.</li> <li>• Illustrate castration techniques, dipping navel cord, docking tails and clipping needle teeth.</li> <li>• Monitor and determine normal body temperature, pulse rate, and respiration rate.</li> <li>• Discuss the importance of iron vaccinations in baby pigs.</li> <li>• Demonstrate the correct procedures to artificially inseminate.</li> <li>• Estimate a pregnancy due date given a breeding date.</li> <li>• Match hormones significant to reproduction to the origin of the hormone.</li> <li>• Graph the correlation of hormones to the estrous cycle.</li> <li>• Define and explain the function of pheromones.</li> <li>• Identify and label anatomical parts of the species.</li> <li>• List the anatomical systems of the body.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 2.4 The student will identify the importance of nutrition and its impact upon management and value discovery.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Evaluate the condition score of sows.</li> <li>• Correlate market value based upon a grid marketing system.</li> <li>• Chart profitability based upon days on feed to pounds of product produced.</li> <li>• Estimate fat thickness, loin-eye area, and percent muscle.</li> <li>• Formulate a balanced ration based upon feedstuffs available in your locale using a Pearson Square.</li> <li>• Construct a least cost balanced ration.</li> <li>• Identify and classify feedstuffs according to nutrient value.</li> <li>• List the essential nutrients and their functions.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>• Calculate and evaluate growing and finishing performance measures (e.g. days on feed, daily gain, and feed efficiency).</li> <li>• Differentiate between micro and macro nutrients.</li> <li>• Determine optimal slaughter weights of swine to optimize marketability.</li> <li>• Describe the variation of market weights in the swine industry and how it relates to consumer demand.</li> </ul>		
<p>Benchmark 2.5 The student will identify diseases and parasites important to the management in addition to the symptoms and signs of disease and health.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Match swine diseases to symptoms.</li> <li>• Describe the management scenario of %all-in, all-out+</li> <li>• Identify parasites of economic importance to the swine industry.</li> <li>• Determine abiotic and biotic conditions significant to herd health.</li> <li>• Develop a vaccination plan and calendar for a swine operation.</li> <li>• Develop a parasite control plan.</li> <li>• Correctly read a label and determine precautions.</li> <li>• Correctly use a pistol grip syringe.</li> <li>• Administer correct dosage and location according to product label.</li> <li>• Calculate housing and space requirements for growing and finishing units.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 2.6 The student will identify and demonstrate equipment crucial to management decisions within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Identify equipment significant to management and production of swine.</li> <li>• Correctly demonstrate artificial insemination techniques.</li> <li>• Demonstrate basic usage of ultrasound usage to evaluate carcass composition or to determine pregnancy.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 2.7 The student will select marketing techniques relative to the production cycle and industry trends.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Compare and contrast various marketing resources available to producers.</li> <li>• Debate benefits and drawbacks of contract feeding versus retained ownership.</li> <li>• Evaluate carcass market value utilizing a grid marketing system.</li> <li>• Synthesize the benefits of niche marketing on the local and global market (e.g. Pasture-</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<p>raised, Organic, Source &amp; Age verified).</p> <ul style="list-style-type: none"> <li>• Compare various USDA muscle scores.</li> <li>• Compare various USDA grade carcasses.</li> </ul>		
<p>Benchmark 2.8 The student will identify the organizations and affiliates significant to the industry as well as their function within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Determine the organization responsible for the Pork Check-off.</li> <li>• Determine the organization responsible for certifying Pork Quality Assurance standards.</li> <li>• Describe the programs associated with the Pork Check-off.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p><b>Standard 3. Students will demonstrate knowledge of the sheep and goat industry and the sheep best management practices.</b></p>		
<p>Benchmark 3.1 The student will identify and assess current and historical industry trends relative to consumption, production, and marketing.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Graph the consumption trends as compared with other food animal species.</li> <li>• Correlate fluctuations in prices, demand, and consumption to historical situations.</li> <li>• Debate the impact of consumer preferences upon consumption and pricing.</li> <li>• Assess the effect food safety issues have on consumer demand.</li> <li>• Explain the reasons for increased chevon demand in Nebraska.</li> <li>• Describe the most significantly important portions of a pork carcass.</li> <li>• Differentiate between lamb, mutton, chevon, and cabrito.</li> <li>• Evaluate production of lamb and goats on a global basis.</li> </ul>		<p>[TBD by NDE]</p>
<p>Benchmark 3.2 The student will appraise breeds significant to the industry and economy.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Report on sheep breeds significant to our county, state, and nation.</li> <li>• Compare and contrast fine wool, medium wool, and long wool breeds.</li> <li>• Describe staple length and staple quality.</li> <li>• Determine Nebraska's rank in sheep production.</li> <li>• Compare and contrast sheep and goat breeds based upon performance and</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>



<p>management characteristics (e.g. maternal traits, terminal sires, wool vs. meat breeds, etc.).</p>		
<p>Benchmark 3.3 The student will develop management skills significant to the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Demonstrate paint branding and describe the benefits.</li> <li>• Monitor and determine normal body temperature, pulse rate, and respiration rate.</li> <li>• Demonstrate proper techniques for vaccination.</li> <li>• Develop a herd identification system.</li> <li>• Illustrate castration techniques.</li> <li>• Describe the purpose of a marking harness.</li> <li>• Estimate a pregnancy due date given a breeding date.</li> <li>• Identify and label anatomical parts of the species.</li> <li>• Match hormones significant to reproduction to the origin of the hormone.</li> <li>• Graph the correlation of hormones to the estrous cycle.</li> <li>• Demonstrate docking tails.</li> <li>• Define and explain the function of pheromones.</li> <li>• List the anatomical systems of the body.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 3.4 The student will identify the importance of nutrition and its impact upon management and value discovery.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Evaluate the condition score of sows.</li> <li>• Correlate market value based upon a grid marketing system.</li> <li>• Chart profitability based upon days on feed to pounds of product produced.</li> <li>• Estimate fat thickness, rib-eye area, and percent boneless closely trimmed retail cuts.</li> <li>• Formulate a balanced ration based upon feedstuffs available in your locale using a Pearson Square.</li> <li>• Construct a least cost balanced ration.</li> <li>• Identify and classify feedstuffs according to nutrient value.</li> <li>• List the essential nutrients and their functions.</li> <li>• Calculate and evaluate growing and finishing performance measures (e.g. days on feed, daily gain, and feed efficiency).</li> <li>• Differentiate between micro and macro nutrients.</li> <li>• Calculate the Animal Unit Month (AUM) requirements for sheep and goats on range and pasture.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>



<ul style="list-style-type: none"> <li>• Determine optimal slaughter weights of sheep and goats to optimize marketability.</li> <li>• Describe the variation of market weights in the sheep and goat industry and how it relates to consumer demand.</li> </ul>		
<p>Benchmark 3.5 The student will identify diseases and parasites important to the management in addition to the symptoms and signs of disease and health.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Match sheep and goat diseases to symptoms.</li> <li>• Identify parasites of economic importance to the sheep and goat industry.</li> <li>• Determine abiotic and biotic conditions significant to herd health.</li> <li>• Develop a vaccination plan and calendar for a sheep operation.</li> <li>• Develop a parasite control plan.</li> <li>• Correctly read a label and determine precautions.</li> <li>• Calibrate and correctly use a deworming drench gun.</li> <li>• Administer correct dosage and location according to product label.</li> <li>• Describe the impact of predators on the sheep and goat industry.</li> <li>• Describe the scrapie identification program and the benefits as well as the requirements.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 3.6 The student will identify and demonstrate equipment crucial to management decisions within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Identify equipment significant to management and production of swine.</li> <li>• Correctly demonstrate the usage of a marking harness.</li> <li>• Demonstrate basic usage of ultrasound usage to evaluate carcass composition or to determine pregnancy.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 3.7 The student will select marketing techniques relative to the production cycle and industry trends.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Compare and contrast various marketing resources available to producers.</li> <li>• Debate benefits and drawbacks of contract feeding versus retained ownership.</li> <li>• Evaluate carcass market value utilizing a grid marketing system.</li> <li>• Conduct a taste test comparing the various meats important to the animal agriculture industry.</li> <li>• Synthesize the benefits of niche marketing on the local and global market (e.g. All-natural, Organic, etc.)</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>• Compare and contrast the various USDA grades for lamb and goat carcasses.</li> <li>• Compare and contrast the various USDA wool grades.</li> </ul>		
<p>Benchmark 3.8 The student will identify the organizations and affiliates significant to the industry as well as their function within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Determine the organization responsible for the Lamb Check-off.</li> <li>• Determine the organization responsible for research and expanding markets for lamb.</li> <li>• Describe the programs associated with the Lamb Check-off.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p><b>Standard 4. Students will demonstrate knowledge of the dairy industry and the best management practices for dairy production.</b></p>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 4.1 The student will identify and assess current and historical industry trends relative to consumption, production, and marketing.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Graph the consumption trends as compared with other food animal species.</li> <li>• Correlate fluctuations in prices, demand, and consumption to historical situations.</li> <li>• Debate the impact of consumer preferences upon consumption and pricing.</li> <li>• Assess the effect food safety issues have on consumer demand.</li> <li>• Explain the reasons for increased dairy product demand.</li> <li>• Utilize the internet to research current issues within the dairy industry.</li> </ul>		<p>[TBD by NDE]</p>
<p>Benchmark 4.2 The student will appraise breeds significant to the industry and economy.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Report on dairy breeds significant to our state, and nation.</li> <li>• Compare registrations of the top five breeds in the U.S.</li> <li>• Discuss why specific breeds are more popular in different regions of the U.S or for specific products.</li> <li>• Utilize the Hoards Dairyman to judge and rank dairy animals on a monthly basis (can be accessed online).</li> <li>• Compare and contrast dairy breeds based upon performance and management characteristics (e.g. protein, lbs. of milk, butterfat, etc.).</li> </ul>	<p>University of University            of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>Name the top dairy regions in Nebraska.</li> <li>Determine Nebraska's rank in dairy production.</li> </ul>		
<p>Benchmark 4.3 The student will develop management skills significant to the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>Demonstrate the proper technique of tattooing.</li> <li>Demonstrate proper techniques for vaccination following Quality Assurance standards.</li> <li>Monitor and determine normal body temperature, pulse rate, and respiration rate.</li> <li>Develop a herd identification system utilizing EID, brisket/ear tags, and/or tattoos.</li> <li>Estimate a pregnancy due date given a breeding date.</li> <li>Demonstrate correct mastitis treatment.</li> <li>Demonstrate the California Mastitis Test.</li> <li>Illustrate castration techniques.</li> <li>Demonstrate removal of extra teats.</li> <li>Debate dewclaw removal and tail docking.</li> <li>Demonstrate dehorning processes.</li> <li>Debate the merits of permanent identification techniques</li> <li>Demonstrate the correct procedures to artificially inseminate.</li> <li>Identify and label anatomical parts of the species.</li> <li>Match hormones significant to reproduction to the origin of the hormone.</li> <li>Graph the correlation of hormones to the estrous cycle.</li> <li>Define and explain the function of pheromones.</li> <li>List the anatomical systems of the body.</li> <li>Discuss basic principles of pregnancy diagnosis via rectal palpation in dairy cattle.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 4.4 The student will identify the importance of nutrition and its impact upon management and value discovery.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>Evaluate the condition score of cows.</li> <li>Correlate market value based upon protein or butterfat.</li> <li>Formulate a balanced ration based upon feedstuffs available in your locale using a Pearson Square.</li> <li>Construct a least cost balanced ration.</li> <li>Calculate the Animal Unit Month (AUM) requirements for dairy cattle on range and pasture.</li> <li>Identify and classify feedstuffs according to nutrient value.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>• List the essential nutrients and their functions.</li> <li>• Calculate and evaluate production measures (e.g. 305 day lactation, lbs./day, etc.)</li> <li>• Debate the benefits and drawbacks of twice daily versus three times daily milking schedules.</li> <li>• Differentiate between micro and macro nutrients.</li> <li>• Determine optimal holding period for milk following treatment or mastitis.</li> <li>• Determine the percent water in milk.</li> <li>• Discuss the nutrient value of milk.</li> <li>• Debate the benefits and drawbacks to BST.</li> </ul>		
<p>Benchmark 4.5 The student will identify diseases and parasites important to the management in addition to the symptoms and signs of disease and health.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Match dairy cattle diseases to symptoms.</li> <li>• Identify parasites of economic importance to the dairy industry.</li> <li>• Determine abiotic and biotic conditions significant to health.</li> <li>• Develop a vaccination plan and calendar for a dairy herd.</li> <li>• Develop a parasite control plan.</li> <li>• Debate the need for fistulated dairy cattle.</li> <li>• Collect a fecal sample and identify parasites present.</li> <li>• Correctly read a label and determine precautions.</li> <li>• Correctly demonstrate proper usage of a teat dilator.</li> <li>• Administer correct dosage and location according to product label.</li> <li>• Visit a dairy and discuss the importance of biosecurity.</li> <li>• Demonstrate proper hoof care techniques.</li> <li>• Demonstrate hairy wart removal and management.</li> <li>• Calculate space requirements for various size and ages of dairy cattle.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 4.6 The student will identify and demonstrate equipment crucial to management decisions within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Identify equipment significant to management and production of dairy cattle.</li> <li>• Identify equipment and functions of equipment within the dairy parlor.</li> <li>• Correctly demonstrate artificial insemination techniques.</li> <li>• Discuss the various parlors within the industry.</li> <li>• Correctly demonstrate CIDr implant implementation.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>Demonstrate basic usage of ultrasound to determine pregnancy.</li> </ul>		
<p>Benchmark 4.7 The student will select marketing techniques relative to the production cycle and industry trends.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>Compare and contrast various marketing resources available to producers.</li> <li>Discuss the impact of sexed semen on the dairy industry.</li> <li>Debate benefits and drawbacks to cooperatives.</li> <li>Synthesize the benefits of niche marketing on the local and global market (e.g. All-Natural, Organic, etc.).</li> <li>Compare various USDA milk grade categories.</li> <li>Debate the merits of flavored milk.</li> </ul>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]
<p>Benchmark 4.8 The student will identify the organizations and affiliates significant to the industry as well as their function within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>Determine the organization responsible for the Dairy Check-off.</li> <li>Determine the organization responsible for certifying dairy standards.</li> <li>Describe the programs associated with the Dairy Check-off.</li> <li>Discuss the various breed and milk associations and their impact on legislation.</li> </ul>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]
<p><b>Standard 5. Students will demonstrate knowledge of the equine industry and the best management practices for equine.</b></p>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]
<p>Benchmark 5.1 The student will identify and assess current and historical industry trends relative to consumption, production, and marketing.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>Graph the production trends as compared with food animal species.</li> <li>Correlate fluctuations in prices, demand, and usage to historical situations.</li> <li>Chart the usage of equine species as draft, work, and companion animals.</li> <li>Illustrate the role of the equine industry in the development of the U.S.</li> </ul>		[TBD by NDE]
<p>Benchmark 5.2 The student will appraise breeds significant to the industry and economy.</p>	University of Nebraska AniSci 100 and 250 Syllabi Modifications	[TBD by NDE]

<p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Report on equine breeds significant to our county, state, and nation.</li> <li>• Compare registrations of the top five breeds in the U.S.</li> <li>• Discuss why specific breeds are more popular in different regions of the U.S.</li> <li>• Compare and contrast equine breeds based upon performance and management characteristics (e.g. performance, draft, racing, companion, etc.).</li> <li>• Determine Nebraska's rank in equine production.</li> <li>• Rank the top equine counties in the state.</li> <li>• Illustrate the various classifications of horses (e.g. ponies, light, draft, and miniatures).</li> </ul>		
<p>Benchmark 5.3 The student will develop management skills significant to the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Demonstrate the proper technique of tattooing.</li> <li>• Demonstrate proper techniques for vaccination.</li> <li>• Monitor and determine normal body temperature, pulse rate, and respiration rate.</li> <li>• Develop a herd identification system utilizing tags, freeze/hot iron brands, microchips and/or tattoos.</li> <li>• Estimate a pregnancy due date given a breeding date.</li> <li>• Demonstrate proper hoof care.</li> <li>• Illustrate castration techniques.</li> <li>• Compare hot iron to freeze branding.</li> <li>• Debate the merits of permanent identification techniques.</li> <li>• Demonstrate the correct procedures to artificially inseminate.</li> <li>• Match hormones significant to reproduction to the origin of the hormone.</li> <li>• Graph the correlation of hormones to the estrous cycle.</li> <li>• Define and explain the function of pheromones.</li> <li>• List the anatomical systems of the body.</li> <li>• Determine age via mousing.</li> <li>• Demonstrate the use of a twitch.</li> <li>• Identify and label anatomical parts of the species.</li> <li>• Discuss basic principles of pregnancy diagnosis.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 5.4 The student will identify the importance of nutrition and its impact upon management and value discovery.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Evaluate the condition score of mares.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>



<ul style="list-style-type: none"> <li>• Correlate market value decline to legislation.</li> <li>• Formulate a balanced ration based upon feedstuffs available in your locale using a Pearson Square.</li> <li>• Construct a least cost balanced ration.</li> <li>• Calculate the Animal Unit Month (AUM) requirements for horses on range and pasture.</li> <li>• Identify and classify feedstuffs according to nutrient value.</li> <li>• List the essential nutrients and their functions.</li> <li>• Differentiate between micro and macro nutrients.</li> </ul>		
<p>Benchmark 5.5 The student will identify diseases and parasites important to the management in addition to the symptoms and signs of disease and health.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Match equine diseases to symptoms.</li> <li>• Identify parasites of economic importance to the equine industry.</li> <li>• Determine abiotic and biotic conditions significant to health.</li> <li>• Develop a vaccination plan and calendar for an equine operation.</li> <li>• Develop a parasite control plan.</li> <li>• Collect a fecal sample and identify parasites present.</li> <li>• Correctly read a label and determine precautions.</li> <li>• Correctly tube/drench a horse.</li> <li>• Administer correct dosage and location according to product label.</li> <li>• Calculate space requirements for various size and ages of equine species.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 5.6 The student will identify and demonstrate equipment crucial to management decisions within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Identify equipment significant to management and production of equine species.</li> <li>• Correctly demonstrate artificial insemination techniques.</li> <li>• Calculate a breeding plan based upon seasonal breeding conditions.</li> <li>• Demonstrate basic usage of ultrasound usage to determine pregnancy.</li> <li>• Identify common western and English riding tack.</li> <li>• Identify parts of a saddle.</li> <li>• Discuss proper restraint methods for the equine species.</li> </ul>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 5.7 The student will select marketing techniques relative to the production cycle and industry trends.</p>	<p>University of Nebraska AniSci 100 and 250 Syllabi Modifications</p>	<p>[TBD by NDE]</p>



<p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Compare and contrast various marketing resources available to producers.</li> <li>• Debate benefits and drawbacks to auctions versus private treaty.</li> </ul>		
<p>Benchmark 5.8 The student will identify the organizations and affiliates significant to the industry as well as their function within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Determine the organizations responsible for monitoring the equine industry.</li> <li>• Determine the organization responsible for equine registrations.</li> <li>• Describe the programs associated with the equine industry.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p><b>Standard 6. Students will demonstrate knowledge of the poultry industry and the poultry best management practices.</b></p>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 6.1 The student will identify and assess current and historical industry trends relative to consumption, production, and marketing.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Graph the consumption trends as compared with other food animal species.</li> <li>• Correlate fluctuations in prices, demand, and consumption to historical situations.</li> <li>• Debate the impact of consumer preferences upon consumption and pricing.</li> <li>• Assess the effect food safety issues have on consumer demand.</li> <li>• List companies in Nebraska that produce poultry products.</li> </ul>		<p>[TBD by NDE]</p>
<p>Benchmark 6.2 The student will appraise breeds significant to the industry and economy.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Report on poultry breeds significant to our state and nation.</li> <li>• Discuss why specific breeds are more popular in different regions of the U.S.</li> <li>• Compare and contrast poultry breeds based upon performance and management characteristics (e.g. broiler, layer, show, companion, game, etc.).</li> <li>• Determine Nebraska's rank in poultry and egg production.</li> </ul>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 6.3 The student will develop management skills significant to the industry.</p> <p><u>Sample performance indicators:</u></p>	<p>University of Nebraska          AniSci 100 and 250          Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>• Demonstrate the proper technique of debeaking.</li> <li>• Demonstrate the proper technique for candling eggs.</li> <li>• Demonstrate proper techniques for vaccination.</li> <li>• Monitor and determine normal body temperature, pulse rate, and respiration rate.</li> <li>• Identify and label anatomical parts of the species.</li> <li>• Illustrate steps to incubation and hatching.</li> <li>• Estimate a hatching date.</li> <li>• Determine fertility and hatchability.</li> <li>• Place a class of laying hens.</li> <li>• Debate the merits of permanent identification techniques.</li> <li>• Demonstrate the correct procedures to artificially inseminate.</li> <li>• Match hormones significant to reproduction to the origin of the hormone.</li> <li>• List the anatomical systems of the body.</li> <li>• Identify the parts of a chicken.</li> </ul>		
<p>Benchmark 6.4 The student will identify the importance of nutrition and its impact upon management and value discovery.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Formulate a balanced ration based upon feedstuffs available in your locale using a Pearson Square.</li> <li>• Construct a least cost balanced ration.</li> <li>• Compare and contrast a poultry digestive tract with a monogastric and ruminant tract.</li> <li>• Identify and classify feedstuffs according to nutrient value.</li> <li>• List the essential nutrients and their functions.</li> <li>• Calculate and evaluate grower performance measures (e.g. feed intake, daily gain, and feed efficiency).</li> <li>• Differentiate between micro and macro nutrients.</li> <li>• Determine optimal slaughter weights of broilers to optimize marketability.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 6.5 The student will identify diseases and parasites important to the management in addition to the symptoms and signs of disease and health.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Match poultry diseases to symptoms.</li> <li>• Identify parasites of economic importance to the poultry industry.</li> <li>• Determine abiotic and biotic conditions significant to health.</li> <li>• Develop a vaccination plan and calendar for a poultry operation.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>

<ul style="list-style-type: none"> <li>• Develop a parasite control plan.</li> <li>• Collect a fecal sample and identify parasites present.</li> <li>• Correctly read a label and determine precautions.</li> <li>• Demonstrate the proper technique for applying blinders to game birds.</li> <li>• Administer correct dosage and location according to product label.</li> <li>• Calculate space requirements for various size and ages of poultry.</li> <li>• Describe housing and ventilation requirements for poultry.</li> </ul>		
<p>Benchmark 6.6 The student will identify and demonstrate equipment crucial to management decisions within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Identify equipment significant to management and production of poultry.</li> <li>• Correctly demonstrate artificial insemination techniques.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 6.7 The student will select marketing techniques relative to the production cycle and industry trends.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Compare and contrast various marketing resources available to producers.</li> <li>• Debate benefits and drawbacks to contract feeding.</li> <li>• Synthesize the benefits of niche marketing on the local and global market (e.g. Pasture-raised, Organic, Cage-free).</li> <li>• Compare various USDA egg grades.</li> <li>• Compare various USDA poultry carcasses.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p>Benchmark 6.8 The student will identify the organizations and affiliates significant to the industry as well as their function within the industry.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Determine the organizations responsible for monitoring the poultry industry.</li> <li>• Determine the organization responsible for poultry registrations.</li> <li>• Describe the programs associated with the poultry industry.</li> <li>• Determine the organizations responsible for the Egg-Checkoff.</li> </ul>	<p>University of Nebraska            AniSci 100 and 250            Syllabi Modifications</p>	<p>[TBD by NDE]</p>
<p><b>Standard 7. Students will distinguish between the concept of animal rights and the concept of animal welfare relative to animal behavior.</b></p>	<p>GA Ag Ed            02.423</p>	<p>[TBD by NDE]</p>

<p>Benchmark 7.1 The student will understand the animal rights and animal welfare principles.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Define the terms animal rights and animal welfare.</li> <li>• Compare and contrast animal rights and animal welfare.</li> <li>• Debate the issues regarding animal rights and animal welfare.</li> </ul>	<p>GA Ag Ed 02.423</p>	<p>[TBD by NDE]</p>
<p>Benchmark 7.2 The student will identify animal rights and animal welfare organizations.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Investigate animal rights and animal welfare organizations and their viewpoints on issues.</li> <li>• Debate current issues surrounding animal rights and animal welfare.</li> </ul>	<p>GA Ag Ed 02.423</p>	
<p>Benchmark 7.3 The student will understand the implications of animal behavior and its correlation to management.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> <li>• Describe the three broad categories of behavior.</li> <li>• Classify the behaviors within the categories of maintenance, social, and learned behavioral categories.</li> <li>• Assess the correlation between genetics and behavior.</li> <li>• Analyze the relationship between animal behavior and movement (e.g. flight zone, facility design).</li> <li>• Discuss the importance of research involved with animal behavior and animal facility design (e.g. Temple Grandin).</li> </ul>		<p>[TBD by NDE]</p>

**Reference Standards Sources**

- NAS = National Ag Standards
- L2L = Nebraska Links to Learn
- CAL = California Agriculture Education Standards
- OHS = Ohio Agriculture Education Standards
- tex = Texas Agriculture Education Standards

## Other Information

Suggestions for innovative teaching and learning strategies:	<ul style="list-style-type: none"> <li>• Field Experience</li> <li>• Classroom Visitors</li> <li>• Professional Presenters</li> <li>• Classroom Projects</li> <li>• Laboratory Practicum</li> </ul>
Related assessments:	<ul style="list-style-type: none"> <li>• Livestock Management Career Development Event</li> <li>• Livestock Selection Career Development Event</li> <li>• Meat Identification and Evaluation Career Development Event</li> <li>• Public Speaking Leadership Skills Event</li> <li>• Agricultural Demonstration Leadership Skills Event</li> <li>• Job Interview Leadership Skills Event</li> <li>• Premier Animal Science Event (4-H)</li> </ul>
Extended learning opportunities:	<ul style="list-style-type: none"> <li>• Supervised Agricultural Experience within the livestock industry or other associated industry.</li> <li>• 4-H/FFA Livestock Projects</li> <li>• Internships</li> <li>• State and National Conventions</li> <li>• Nebraska Agricultural Youth Institute</li> <li>• Professional Workshops</li> <li>• Professional Associations</li> </ul>