

## Large Animal Science

### Course Description:

- Suggested grade level: 9<sup>th</sup> – 12<sup>th</sup>
- Pre-requisite: None
- Text: *Modern Livestock and Poultry Production, 7<sup>th</sup> Ed*; Delmar Learning
- Available Credit: ½ credit
- This course will include the study of animal health, genetics, reproduction, nutrition, digestion, and anatomy. Also covered are the common breeds, care, and management of beef, sheep, swine, goats, and horses.

### Core Technical Standards and Examples

<b>Indicator #1:</b> Apply knowledge of anatomy and physiology to produce and/or manage animals in a domesticated or natural environment.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Evaluation	An1.1 Use classification systems to explain basic functions of animal anatomy and physiology.	<ul style="list-style-type: none"> <li>• Describe functional differences in animal structures and body systems.</li> <li>• Classify animals according to anatomy and physiology.</li> <li>• Identify common breeds of livestock.</li> <li>• Use livestock evaluation terminology, along with evaluation of livestock by giving oral reasons.</li> </ul>	<ul style="list-style-type: none"> <li>• Breed identification quizzes for sheep, cattle, swine, and horses.</li> <li>• Create PowerPoint presentations for sheep, cattle, swine, and horses breeds.</li> <li>• Livestock Evaluation lessons for Sheep, Beef, and Swine Units.</li> <li>• Digestive System Unit</li> </ul>
Knowledge	An1.2 Recognize the anatomy of animal species to understand how the body structures interact and affect animal health.	<ul style="list-style-type: none"> <li>• Identify selected animal parts from a diagram or on a real animal.</li> <li>• Identify ways that an animal's health can be affected by anatomy/physiology problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Parts of the animal quizzes for sheep, cattle, swine, and horses.</li> </ul>
Knowledge	An1.3 Analyze a subject animal to determine the nature of its health status.	<ul style="list-style-type: none"> <li>• Perform simple procedures in evaluating an animal's health status.</li> <li>• Identify symptoms of diseases, illnesses, parasites, and other health-related problems.</li> <li>• Diagnose animal ailments.</li> <li>• Implement disease prevention and health improvement program.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and Reproduction lessons for Sheep, Beef, Swine, and Horse Units.</li> <li>•</li> </ul>

<b>Indicator #2:</b> Recognize animal behaviors to facilitate workings with animals safely.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Synthesis	An2.1 Develop a safety plan for working with a specific animal.	<ul style="list-style-type: none"> <li>• Explain factors which serve to stimulate or discourage given types of animal behavior.</li> <li>• Perform safe handling procedures when working with animals and observe facilities at area farms/ranches.</li> <li>• Identify strengths and weaknesses of an animal safety handling plan and design a working facility.</li> </ul>	<ul style="list-style-type: none"> <li>• Management and Housing and Equipment Lessons for Sheep, Beef, Swine, and Horse Units.</li> </ul>

<b>Indicator #3:</b> Provide proper nutrition to maintain animal performance.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Knowledge	An3.1 Examine animal developmental stages to comprehend why nutrient requirements are different throughout an animal's life cycle.	<ul style="list-style-type: none"> <li>• Recognize the different phases of an animal's life cycle by drawing a diagram</li> <li>• Select diets which provide the appropriate quantity of nutrients for each animal developmental stage using local feed supply.</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient Uses and Requirements Lesson in Nutrition Unit.</li> </ul>
Analysis	An3.2 Analyze a feed ration to determine whether or not it fulfills a given animal's nutrient requirements.	<ul style="list-style-type: none"> <li>• Identify the differences between good and poor quality feedstuffs.</li> <li>• Create a balanced ration for a given animal using local feed offered.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of Feed Lesson in Nutrition Unit.</li> </ul>
Synthesis	An3.3 Record and compare feed variations to assess whether the nutritional requirements of a given animal are being met.	<ul style="list-style-type: none"> <li>• Use different types of feedstuffs (e.g., roughage, concentrates) to create a feed ration containing the appropriate amounts of required nutrients.</li> <li>• Use different forms of feedstuffs (e.g., pellets, cracked, rolled and steamed)</li> </ul>	<ul style="list-style-type: none"> <li>• Pearson Square Lesson in Nutrition Unit.</li> </ul>

<b>Indicator #4:</b> Know the factors that influence an animal's reproductive cycle to explain species response.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Analysis	An4.1 Analyze elements in the reproductive cycle to explain differences between male and female reproductive systems.	<ul style="list-style-type: none"> <li>Identify the parts of male and female reproductive tracts on example animals.</li> <li>Analyze the reproductive cycle of a given animal by using a reproductive tract.</li> <li>Evaluate animal readiness for breeding.</li> </ul>	<ul style="list-style-type: none"> <li>Reproduction Systems and Functions Lesson in Reproduction Unit.</li> </ul>
Knowledge	An4.2 Discuss reproductive cycles to show how they differ from species to species.	<ul style="list-style-type: none"> <li>Discuss the pros and cons of breeding through natural cover and artificial insemination and embryo transfer.</li> <li>Discuss the implications of genetic variation.</li> <li>Describe techniques of artificial insemination by demonstrating on a live animal</li> <li>Identify reproduction management practices (e.g., male to female ratios, age and weight for breeding, fertility and soundness for breeding, heat synchronization, flushing).</li> </ul>	<ul style="list-style-type: none"> <li>Breeding Systems Lesson in Reproduction Unit.</li> <li>Artificial Insemination Lesson in Reproduction Unit.</li> <li>Embryo Transfer Lesson in Reproduction Unit.</li> <li>Cloning Lesson in Reproduction Unit.</li> <li>Health and Reproduction Lessons for Sheep, Beef, Swine, and Horse Units.</li> </ul>
Knowledge	An4.3 Evaluate an animal to determine its breeding soundness.	<ul style="list-style-type: none"> <li>Describe the procedure for determining an animal's breeding readiness.</li> <li>Identify and prevent problems associated with reproduction.</li> <li>Select animals based on breeding soundness.</li> </ul>	<ul style="list-style-type: none"> <li>Estrus, Pregnancy, and Parturition Lesson in Reproduction Unit.</li> <li>Health and Reproduction Lessons for Sheep, Beef, Swine, and Horse Units.</li> </ul>
	An4.4 Evaluate/predict genetics.	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Genes and Chromosomes Lesson in Reproduction Unit.</li> </ul>

<b>Indicator #5:</b> Identify environmental factors that affect an animal's performance.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Knowledge	An5.1 Recognize optimum performance for a given animal species.	<ul style="list-style-type: none"> <li>Identify good performance for a given animal species and list that performance on a power point presentation.</li> <li>Identify reasons why some animals perform better than others.</li> </ul>	<ul style="list-style-type: none"> <li>Introduction Lessons for Sheep, Beef, Swine, and Horse Units.</li> </ul>
Application	An5.2 Create a program to develop an animal to its highest potential performance.	<ul style="list-style-type: none"> <li>Identify factors that can be manipulated to control a given animal's performance.</li> <li>Generate ways to increase an animal's performance and implant them on a mock herd.</li> </ul>	<ul style="list-style-type: none"> <li>Feeding and Management Lessons for Sheep, Beef, Swine, and Horse Units.</li> </ul>
Analysis	An5.3 Assess an animal to determine if it has reached its optimum performance level.	<ul style="list-style-type: none"> <li>Make appropriate changes in an animal's environment in order to achieve optimum performance.</li> <li>Use appropriate tools in manipulating animal performance this maybe be for example; feeder mixer, scales and other equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Feeding and Management Lessons for Sheep, Beef, Swine, and Horse Units.</li> <li>Housing and Equipment Lessons for Sheep, Beef, Swine, and Horse Units.</li> <li>Parturition and Care of Newborn Lessons for Sheep, Beef, Swine, and Horse Units.</li> <li>Wool and Shearing Lesson in Sheep Unit.</li> </ul>
Application	An5.4 Develop efficient procedures to produce consistently high-quality animals, well-suited for their intended purpose.	<ul style="list-style-type: none"> <li>Identify a given species' desirable production numbers (e.g., birth weight, rate of gain, age of maturity, age of sexual maturity).</li> <li>Evaluate desired traits (e.g., production) of animals.</li> <li>Explore animal welfare and animal rights</li> </ul>	<ul style="list-style-type: none"> <li>Health and Reproduction Lessons for Sheep, Beef, Swine, and Horse Units.</li> <li>Livestock Evaluation lessons for Sheep, Beef, and Swine Units.</li> <li></li> </ul>
Analysis	An5.5 Evaluate the role that economics plays in animal reproduction.	<ul style="list-style-type: none"> <li>Design facilities appropriate for the production of a given species of animal.</li> <li>Make decisions on using new techniques and methods in the production facility so that both profit and animal safety are maximized</li> </ul>	<ul style="list-style-type: none"> <li>Housing and Equipment Lessons for Sheep, Beef, Swine, and Horse Units</li> </ul>