

Colorado CTE Course – Scope and Sequence

Course Name	Equine Management		Course Details	Level 3 course in the Animal Science pathway. This course would be applicable to either the Vet Science or Animal Production strands.		
			Course = 0.50 Carnegie Unit Credit			
Course Description	Covers the basics of the equine industry, breeds, selection, form to function, care and management, soundness, health, reproduction, feeding, facilities, physiology, production systems and management systems					
Note:	This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all essential knowledge and skills are covered.					
SCED Identification #	18104	Schedule calculation based on 60 % of instructional time in semester. Scope and sequence allows for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.				
All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at https://www.cde.state.co.us/standardsandinstruction/essentialskills						
Instructional Unit Topic	Suggested % of Instructional Time	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration	
Equine Industry <ul style="list-style-type: none"> Employability Skills & Resources Industry Concerns Industry Trends History, Evolution, Zoological Order, and Today's Horse Types Light Breeds Draft & Coach Horses Horses Less Than 14.2 Hands Donkeys & Mules Coat Colors, Markings, Patterns 	6%	AS.01. CCTC Standard: Analyze historic and current trends impacting the animal systems industry. AS.02. CCTC Standard: Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.	AS.01.01. Performance Indicator: Evaluate the development and implications of animal origin, domestication and distribution on production practices and the environment. AS.02.01. Performance Indicator: Demonstrate management techniques that ensure animal welfare.	AS.01.01.01.a. Identify and summarize the origin, significance, distribution and domestication of different animal species. AS.01.01.01.b. Evaluate and describe characteristics of animals that developed in response to the animal's environment and led to their domestication. AS.01.01.02.b. Describe the historical and scientific developments of different animal industries and summarize the products, services and careers associated with each. AS.01.01.02.c. Predict trends and implications of future developments within different animal industries on production practices and the environment. AS.02.01.01.a. Explain the implications of animal welfare and animal rights for animal systems.	Prepared Public Speaking LDE Employability Skills LDE Horse Judging CDE	

		AS.06. CCTC Standard: Classify, evaluate and select animals based on anatomical and physiological characteristics.	AS.06.01. Performance Indicator: Classify animals according to taxonomic classification systems and use (e.g. agricultural, companion, etc.).	AS.06.01.01.a. Explain the importance of the binomial nomenclature system for classifying animals. AS.06.01.01.b. Explain how animals are classified using a taxonomic classification system. AS.06.01.01.c. Assess taxonomic characteristics and classify animals according to the taxonomic classification system.	
Anatomy and Physiology <ul style="list-style-type: none"> External Anatomy Identification Organ Systems External & Internal Parts of the Hoof Teeth and Age 	15%	AS.06. CCTC Standard: Classify, evaluate and select animals based on anatomical and physiological characteristics.	AS.06.02. Performance Indicator: Apply principles of comparative anatomy and physiology to uses within various animal systems.	AS.06.02.03.a. Identify and summarize the properties, locations, functions and types of animal cells, tissues, organs and body systems. AS.06.02.03.b. Compare and contrast animal cells, tissues, organs, body systems types and functions among animal species.	Horse Judging CDE Veterinary Science CDE Prepared Public Speaking LDE
Reproduction and Genetics <ul style="list-style-type: none"> Reproductive Anatomy Review Hormones of Reproduction Estrous/ Estrus Selection and Breeding Fertilization, Gestation, and Parturition Reproductive Technologies Dominant and Recessive Genes Things that Affect Heredity Color Coat Genetics Genetic Disorders 	12%	AS.04. CCTC Standard: Apply principles of animal reproduction to achieve desired outcomes for performance, development and/or economic production.	AS.04.01. Performance Indicator: Evaluate animals for breeding readiness and soundness. AS.04.02. Performance Indicator: Apply scientific principles to select and care for breeding animals.	AS.04.01.01.b. Analyze the functions of major organs in the male and female reproductive systems. AS.04.01.02.a. Compare and contrast how age, size, life cycle, maturity level and health status affect the reproductive efficiency of male and female animals. AS.04.01.02.b. Assess and describe factors that lead to reproductive maturity. AS.04.01.02.c. Evaluate and select animals for reproductive readiness. AS.04.02.03.a. Summarize the importance of efficient and economic reproduction in animals. AS.04.02.03.b. Evaluate reproductive problems that occur in animals. AS.04.02.03.c. Treat or cull animals with reproductive problems. AS.04.02.01.a. Summarize genetic inheritance in animals. AS.04.02.01.b. Compare and contrast the use of genetically superior animals in the production of animals and animal products. AS.04.02.01.c. Select and evaluate a breeding system based on the principles of genetics. AS.04.02.02.a. Identify and summarize inheritance and terms related to inheritance in animal breeding (e.g.,	Horse Judging CDE Veterinary Science CDE Prepared Public Speaking LDE

			<p>AS.04.03 Performance Indicator: Apply scientific principles to breed animals.</p>	<p>dominate, co-dominate, recessive, homozygous, heterozygous, etc.).</p> <p>AS.04.02.02.b Demonstrate how to determine probability trait inheritance in animals.</p> <p>AS.04.02.03.a. Identify and summarize genetic defects that affect animal performance</p> <p>AS.04.02.03.b. Analyze how DNA analysis can detect genetic defects in breeding stock</p> <p>AS.04.02.04.a. Identify and summarize different needs of breeding animals based on their growth stages (e.g., newborn, parturition, gestation, gestation lengths, etc.).</p> <p>AS.04.02.04.b. Analyze the care needs for breeding stock in each stage of growth.</p> <p>AS.04.03.01.a. Identify and categorize natural and artificial breeding methods (e.g., natural breeding, artificial insemination, estrous synchronization, flushing, cloning, etc.).</p> <p>AS.04.03.01.b. Calculate the potential economic benefits of natural versus artificial breeding methods.</p> <p>AS.04.03.01.c. Select animal breeding methods based on reproductive and economic efficiency.</p> <p>AS.04.03.02.a. Analyze the materials, methods and processes of artificial insemination.</p> <p>AS.04.03.02.b. Demonstrate artificial insemination techniques.</p> <p>AS.04.03.03.a. Identify and summarize the advantages and disadvantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer (e.g., cost, labor, equipment, etc.).</p> <p>AS.04.03.03.b. Analyze the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.</p>	
<p>Diseases and Disorders</p> <ul style="list-style-type: none"> • Fungal • Bacterial • Viral • Parasitic • Nutritional 	6%	<p>AS.07. CCTC Standard: Apply principles of effective animal health care.</p>	<p>AS.07.01. Performance Indicator: Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.</p>	<p>AS.07.01.03.a. List and summarize the characteristics of wounds, common diseases, parasites and physiological disorders that affect animals.</p> <p>AS.07.01.03.b. Identify and describe common illnesses and disorders of animals based on symptoms and problems caused by wounds, diseases, parasites and physiological disorders.</p>	<p>Horse Judging CDE</p> <p>Veterinary Science CDE</p>

<ul style="list-style-type: none"> Genetic Behavioral 				<p>AS.07.01.04.a. Identify and summarize characteristics of causal agents and vectors of diseases and disorders in animals.</p> <p>AS.07.01.04.b. Research and analyze data to evaluate preventive measures for controlling and limiting the spread of diseases, parasites and disorders among animals.</p>	
<p>Management and Facilities</p> <ul style="list-style-type: none"> Health & Safety Housing Considerations Barn Design & Flooring Common Facility Equipment Nutrition & Health Uses and Disciplines Exercise Grooming Saddling 	15%	<p>AS.02. CCTC Standard: Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.</p> <p>AS.03. CCTC Standard: Design and provide proper animal nutrition to achieve desired outcomes for performance, development, reproduction and/or economic production.</p>	<p>AS.02.01. Performance Indicator: Demonstrate management techniques that ensure animal welfare.</p> <p>AS.03.01. Performance Indicator: Analyze the nutritional needs of animals.</p>	<p>AS.02.01.01.b. Design programs that assure the welfare of animals and prevent abuse or mistreatment.</p> <p>AS.02.01.01.c. Implement and evaluate quality-assurance programs and procedures for animal production.</p> <p>AS.02.01.02.a. Research and summarize the challenges involved in working with animals and resources available to overcome them (e.g., tools, technology, equipment, facilities, animal behavior signals, etc.).</p> <p>AS.02.01.02.b. Analyze and document animal welfare procedures used to ensure safety and maintain low stress when moving and restraining animals.</p> <p>AS.02.01.02.c. Devise, implement and evaluate safety procedures and plans for working with animals by species using information based on animal behavior and responses.</p> <p>AS.02.01.03.a. Distinguish between animal husbandry practices that promote animal welfare and those that do not.</p> <p>AS.02.01.03.b. Analyze and document animal husbandry practices and their impact on animal welfare.</p> <p>AS.02.01.03.c. Devise economical recommendations to increase the welfare of animals in animal systems.</p> <p>AS.03.01.01.a. Identify and summarize essential nutrients required for animal health and analyze each nutrient's role in growth and performance.</p> <p>AS.03.01.01.b. Differentiate between nutritional needs of animals in different growth stages and production systems (e.g., maintenance, gestation, natural, organic, etc.).</p>	<p>Horse Judging CDE</p> <p>Veterinary Science CDE</p>

		<p>AS.05. Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.</p>	<p>AS.05.01. Performance Indicator: Design animal housing, equipment and handling facilities for the major systems of animal production.</p>	<p>AS.05.01.01.a. Differentiate between the types of facilities needed to house and produce animal species safely and efficiently. AS.05.01.01.b. Critique designs for an animal facility and prescribe alternative layouts and adjustments for the safe, sustainable and efficient use of the facility. AS.05.01.01.c. Design an animal facility focusing on animal requirements, economic efficiency, sustainability, safety and ease of handling. AS.05.01.02.a. Identify and summarize equipment, technology and handling facility procedures used in modern animal production (e.g., climate control devices, sensors, automation, etc.). AS.05.01.02.b. Analyze the use of modern equipment, technology and handling facility procedures and determine if they enhance the safe, economic and sustainable production of animals.</p>	
		<p>AS.07. CCTC Standard: Apply principles of effective animal health care.</p>	<p>AS.07.01. Performance Indicator: Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.</p>	<p>AS.07.01.01.a. Identify and summarize specific tools and technology used in animal health management. AS.07.01.01.b. Describe and demonstrate the proper use and function of specific tools and technology related to animal health management. AS.07.01.04.c. Design and implement a health maintenance and a disease and disorder prevention plan for animals in their natural and/or confined environments.</p>	
<p>Uses and Evaluation</p> <ul style="list-style-type: none"> • Halter Evaluation • Western Pleasure • Western Horsemanship • Hunter Under Saddle • Hunter Hack • Hunt Seat Equitation • Reining 	6%	<p>AS.06. CCTC Standard: Classify, evaluate and select animals based on anatomical and physiological characteristics.</p>	<p>AS.06.03. Performance Indicator: Select and train animals for specific purposes and maximum performance based on anatomy and physiology.</p>	<p>AS.06.03.02.a. Evaluate an animal against its optimal anatomical and physiological characteristics. AS.06.03.02.b. Compare and contrast procedures to sustainably and efficiently develop an animal to reach its highest performance potential with respect to its anatomical and physiological characteristics.</p>	<p>Horse Judging CDE</p>