

Colorado CTE Course – Scope and Sequence

Course Name	Advanced Animal Production and Management A		Course Details	Level 4 course in the Animal Science Pathway. This is the third semester of content in the animal production strand.		
			Course = 0.50 Carnegie Unit Credit			
Course Description	Students will identify current Farm to Table trends, take a deep dive into animal genetics at the cellular level including heredity and genetic mutations and variations, look at animal diseases and the antigens to fight those diseases and develop a heard health plan.					
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 #	18103	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	
Unit 1: Farm to Table- <ul style="list-style-type: none"> Animal Supply Chain 	10%	CS.02. Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food and natural resources (AFNR) in society and the economy.	CS.02.02. Examine the components of the AFNR systems and assess their impact on the local, state, national and global society and economy.	CS.02.02.01.a. Identify and summarize the components within AFNR systems (e.g., Animal Systems: health, nutrition, genetics, etc.; Natural Resources Systems: soil, water, etc.). CS.02.02.01.b. Assess components within AFNR systems and analyze relationships between systems. CS.02.02.02.a. Define and summarize societies on local, state, national and global levels and describe how they relate to AFNR systems. CS.02.02.02.b. Assess how people within societies on local, state, national and global levels		

				interact with AFNR systems on daily, monthly or yearly basis.	
Unit 2: Genetics, DNA and Heritability <ul style="list-style-type: none"> • Meiosis and Mitosis • Chromosomes and DNA sequencing • Genetic Mutations and Disorders • Dominant and Recessive genes • Heritability and genetic variation 	25%	AS.04. Apply principles of animal reproduction to achieve desired outcomes for performance, development and/or economic production.	AS.04.02. Apply scientific principles to select and care for breeding animals.	AS.04.02.01.a. Summarize genetic inheritance in animals. AS.04.02.02.b Demonstrate how to determine probability trait inheritance in animals. AS.04.02.02.a. Identify and summarize inheritance and terms related to inheritance in animal breeding (e.g., dominate, co-dominate, recessive, homozygous, heterozygous, etc.). AS.04.02.03.a. Identify and summarize genetic defects that affect animal performance	
Unit 3: Animal Health <ul style="list-style-type: none"> • Healthy vs. Unhealthy characteristics • Common diseases and disease causing agents • Disease classification • Parasites • Zoonotic diseases • Vaccines and Antibiotics • Herd Health Plan 	25%	AS.07. Apply principles of effective animal health care.	AS.07.01. Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.	AS.07.01.01.a. Identify and summarize specific tools and technology used in animal health management. AS.07.01.02.a. Explain methods of determining animal health and disorders. AS.07.01.02.b. Perform simple health-check evaluations on animals and practice basic emergency response procedures related to animals. AS.07.01.03.a. List and summarize the characteristics of wounds, common diseases, parasites and physiological disorders that affect animals.	

			<p>AS.07.02. Analyze biosecurity measures utilized to protect the welfare of animals on a local, state, national, and global level.</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>AS.07.01.03.c. Treat common diseases, parasites and physiological disorders of animals according to directions prescribed by an animal health professional.</p> <p>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>AS.07.02.01.a. Summarize the importance of biosecurity to the animal industry at multiple levels (e.g., local, state, national, global).</p> <p>AS.07.02.02.a. Identify and describe zoonotic diseases including their historical significance and potential future implications.</p>	
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Colorado CTE Course – Scope and Sequence

Course Name	Advanced Animal Production and Management B		Course Details	Level 4 course in the Animal Science Pathway. This is the final semester of content in the animal production strand.	
			Course = 0.50 Carnegie Unit Credit		
Course Description	Students will identify current issues facing animal agriculture and develop presentations debating those issues, dive into the quality and yield grades of the production animal species, identify primal and retail cuts and the cookery methods associated with each, and spend time evaluating and selecting animals for given scenarios.				
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 #	18103	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					
Standards in this course are from the 2016 National AFNR (three letter prefix) and the 2010 Co CTE sets (four letter prefix).					
Instructional Unit Topic	Suggested % of Instructional Time	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration
Unit 1: Meat Science <ul style="list-style-type: none"> Quality and Yield Grading Indicators Primal and Sub Primal Cuts ID Retail cut ID Retail cut cookery methods 	25%	FFPA .10 Meat Science	FPPS 10.01 Apply principles of carcass evaluation	FPPS.10.01.a Use visual appraisal to predict the quality and yield grade of a carcass FPPS.10.01.b Define measurement tools to predict the quality and yield grade of a carcass FPPS.10.01.c Use measurement tools to predict the quality and yield grade of a carcass FPPS.10.01.d Predict carcass quality based on live animal evaluation and husbandry practices FPPS.10.02.a Define yield grade and calculate dressing percentages	

			<p>FPPS 10.02 Determine yield grade and impact on product value</p> <p>FPPS 10.03 Identify meat cuts</p> <p>FPPS.10.4 Determine quality grade and impact on product value</p>	<p>FPPS.10.02.b Explain yield grade factors</p> <p>FPPS.10.02.c Evaluate carcass indicators to determine yield grade</p> <p>FPPS.10.03.a Identify wholesale cuts</p> <p>FPPS.10.03.b Identify retail cuts</p> <p>FPPS.10.03.c Explain the importance of cut identification as it relates to animal production</p> <p>FPPS.10.04.a Define quality grade</p> <p>FPPS.10.04.b Explain quality grade factors</p> <p>FPPS.10.04.c Evaluate carcass indicators to determine quality grade</p>	
<p>Unit 2: Evaluation and Selection</p> <ul style="list-style-type: none"> Evaluation and Selection of animals for various scenarios 	25%	<p>AS.06. 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.06.03.01.b. Compare and contrast desirable anatomical and physiological characteristics of animals within and between species.</p> <p>AS.06.03.01.c. Evaluate and select animals to maximize performance based on anatomical and physiological characteristics that affect health, growth and reproduction</p>	

				<p>AS.06.03.02.a. Evaluate an animal against its optimal anatomical and physiological characteristics.</p> <p>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>AS.06.03.02.c. Choose, implement and evaluate sustainable and efficient procedures (e.g., selection, housing, nutrition and management) to produce consistently high-quality animals that are well suited for their intended purposes.</p> <p>AS.06.03.03.c. Evaluate and select animals to produce superior animal products based on industry standards</p>	
<p>Unit 3: Agriculture Issues-Students will research the various current issues facing the animal production industry</p>	<p>10%</p>	<p>CS.01. Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.</p>	<p>CS.01.01. Performance Indicator: Research, examine and discuss issues and trends that impact AFNR systems on local, state, national and global levels.</p>	<p>CS.01.01.01.b. Analyze and summarize AFNR issues and their impact on local, state, national and global levels.</p> <p>CS.01.01.02.a. Research and summarize trends impacting AFNR systems.</p> <p>CS.01.01.02.b. Analyze current trends in AFNR systems and predict their impact on local, state, national and global levels.</p>	

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