

Colorado AFNR Course Scope and Sequence

Course Name	Principles of Food Production		Course Details	Level 2 course following Introduction to Agriculture A & B in the Food Science pathway.	
			Course = 0.50 Carnegie Unit Credit		
Course Description	Students identify changes and trends in local and global food systems while understanding the selection, evaluation, and inspection of existing food systems. Learning more about the production and distribution channels of both animal and plant products while also recognizing the role of marketing in the food industry.				
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 #	18301	Schedule calculation based on 60% of a semester instructional time. 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					
Unit Number, Title and Brief Description	Suggested % of Instructional Time	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration
Unit 1: Food Production Systems		FPPS.0 Understand the Food Products and Processing Industry	FPPS.01.04 Identify and evaluate food products and processing segments. FPPS.01.05 Identify and design distribution channels.	FPPS.01.04.a Define producers, packers/processors, distributors, and consumers. FPPS.01.04.b Describe the interrelationship of processing segments. FPPS.01.05.a Define wholesalers, local markets/direct markets (CSA), retailers, governments/institutional (school lunch and prison program), restaurants (catering)/hotel, fast food	

				FPPS.01.05.b Describe the movement of products through channels.	
Unit 2: Cultural Perspectives of Food & Food Production Methods		FPPS.02 Understand World Food Needs FPPS.02.03 Explain food related cultural practices and their impact on food supply. FPPS.02.04 Analyze the relationship between food supply and economic development. FPPS.02.05 Analyze food supply systems based on sustainability. FPP.04 Explain the scope of the food industry and the historical and current developments of food products and processing.	FPPS.02.03.a Define and describe organic, natural, conventional, GMO's. FPPS.02.03.b Research cultural practices and their impact on quantity and quality of food production. FPPS.02.04.a Describe food supply and its impact on economic development. FPPS.02.04.b Research food supply in developed and underdeveloped countries. SAMPLE ACTIVITY: World Hunger Challenge FPPS.02.05.a Define sustainable food supply and identify sustainable food production practices. FPPS.02.05.b Research current practices to improve sustainability in food supply. FPPS.02.05.c Compare sustainability of food supplies in developed to developing countries FPP.04.01 Examine the scope of the food industry by evaluating local and global policies, trends, and customs for food production.	FPPS.01.05.b Describe the movement of products through channels. FPPS.02.03.a Define and describe organic, natural, conventional, GMO's. FPPS.02.03.b Research cultural practices and their impact on quantity and quality of food production. FPPS.02.04.a Describe food supply and its impact on economic development. FPPS.02.04.b Research food supply in developed and underdeveloped countries. SAMPLE ACTIVITY: World Hunger Challenge FPPS.02.05.a Define sustainable food supply and identify sustainable food production practices. FPPS.02.05.b Research current practices to improve sustainability in food supply. FPPS.02.05.c Compare sustainability of food supplies in developed to developing countries FPP.04.01.02.a Examine the impact of consumer trends on food products and processing practices	

			<u>SCIENCE:</u> <u>NGSS.HS.ETS1.3</u>	(e.g. health and nutrition, organic, information about food products, local food movements, farm-to-form, supply chains, food system transparency, etc) FPP.04.01.03.a Compare and contrast cultural differences regarding food products and processing practices. FPP.04.01.03.b Analyze food production and distribution outcomes based on cultural customs.	
Unit 3: Food Processing		FPP.03 Select and process food products for storage, distribution, and consumption.	FPP.03.02 Design and apply techniques of food processing, preservation, packaging, and presentation for distribution and consumption of food products.	FPP.03.02.02.a Differentiate between methods and materials used for processing food for different markets (e.g. fresh food products, ready to eat food products, etc) FPP.03.02.02.b Outline appropriate methods and prepare foods for sale and distribution of different markets. FPP.03.02.04.a Summarize types of materials and methods used in food packaging and presentation. FPP.03.02.04.b Analyze the degree of desirable food qualities of foods stored in various packaging.	

Unit 4: Nutrition & Food • Nutrient Classification • Nutrient Requirement • Impact of Nutrition on Societies		FPP.02 Apply principles of nutrition, biology, microbiology, chemistry, and human behavior to the development of food products.	FPP.02.01 Apply principles of nutrition and biology to develop food products that provide a safe, wholesome, and nutritious food supply for local and global food systems. FPPS.02.02 Analyze the relationship between diet and population health.	FPP.02.01.01.a Research and summarize properties of common food constituents (e.g. proteins, carbohydrates, fats, vitamins, minerals) FPP.02.01.02.a Research and report methods of nutritional planning to meet essential needs for the human diet (e.g. MyPlate) FPP.02.01.02.b Compare and contrast the nutritional needs of different human diets. FPPS.02.02.a Identify nutritional diseases/deficiencies. FPPS.02.02.b Determine causes of diseases/deficiencies. FPPS.02.02.c Explore societal impacts of diet and health.	
Unit 5: Food labeling		FPP.02 Apply principles of nutrition, biology, microbiology, chemistry, and human behavior to the development of food products.	FPP.02.03 Apply principles of human behavior to develop food products to provide a safe, wholesome, and nutritious food supply for local and global food systems.	FPP.02.03.0.a Examine and explain the importance of food labeling to the consumer. FPP.02.03.01.b Examine, interpret, and explain the meaning of required components on a food label.	

Unit 6: Food Inspection & Quality Evaluation Meat, Milk, Eggs, Fruits, Vegetables		FPP.03 Select and process food products for storage, distribution, and consumption.	FPP.03.01 Implement selection, evaluation, and inspection techniques to ensure safe and quality food products.	FPP.03.01.01.a Summarize characteristics of quality and yield grades of food products. FPP.03.01.01.b Analyze factors that affect quality and yield grades of food products. FPP.03.01.01.c Outline procedures to assign quality and yield grades to food products according to industry standards. FPP.03.01.02.a Summarize procedures to select raw food products based on yield grades and quality grades. FPP.03.02.03.a Identify and describe protocols for inspection and harvesting techniques for animal food products (e.g. pre-mortem and post-mortem inspections, Food Safety Inspection Service Guidelines FSIS, etc) FPP.03.01.03.b Examine and evaluate inspection and harvesting of animals using regulatory agency approved or industry approved techniques.	
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Academic Standards Alignment

Colorado CTE courses are required to integrate academic and essential skills into course content. The following academic standards have been identified as aligned to this course and should be integrated throughout instruction.

[CO CTE Academic Standards Resources](#) (Rubrics, integration strategies, etc)

[CDE Colorado Academic Standards Online](#) (Online standards lookup tool)

Standard 1: Oral Expression and Listening

Prepared Graduate 1: *Collaborate effectively as group members or leaders who listen actively and respectfully; pose thoughtful questions, acknowledge the ideas of others; and contribute ideas to further the group's attainment of an objective.*

Students collaborate to evaluate food production systems, investigate sustainability practices, analyze food distribution channels, assess food quality, and solve problems related to food production, inspection, and processing through classroom and laboratory activities.

Standard 2: Reading for All Purposes

Prepared Graduate 4: *Read a wide range of informational texts to build knowledge and to better understand the human experience.*

Students analyze food industry resources, sustainability studies, food labeling regulations, nutrition information, food inspection guidelines, processing methods, and global food system data to understand food production and distribution.

Prepared Graduate 5: *Understand how language functions in different contexts, command a variety of word-learning strategies to assist comprehension, and make effective choices for meaning or style when writing and speaking.*

Students develop and apply specialized vocabulary related to food production, sustainability, food processing, nutrition, food labeling, quality grading, food inspection, distribution systems, and food safety to communicate effectively in food production settings.

Standard 3: Writing and Composition

Prepared Graduate 6: *Craft arguments using techniques specific to the genre.*

Students evaluate food production systems, sustainability practices, processing methods, nutrition recommendations, labeling requirements, and inspection procedures, defending recommendations using scientific evidence, industry standards, and research findings.

Prepared Graduate 7: *Craft informational/explanatory texts using techniques specific to the genre.*

Students develop reports explaining food production systems, sustainability practices, nutrition planning, food labeling, food processing methods, inspection procedures, and quality evaluation using scientific and technical information.

Standard 4: Research Inquiry and Design

Prepared Graduate 10: *Gather information from a variety of sources; analyze and evaluate its quality and relevance; and use it ethically to answer complex questions.*

Students research global food systems, cultural food production practices, sustainability, food processing methods, nutrition, food labeling, food quality standards, and food inspection procedures to evaluate food production systems and develop evidence-based recommendations for improving food quality, safety, and distribution.

Note: *Mathematics and Science standards will be added in the future. Visit the [Colorado Academic Standards](#) page for the most current version.*