

Colorado AFNR Course Scope and Sequence

Course Name	Landscape Construction and Maintenance		Course Details	Level 4 advanced course in the Plant Science pathway. This course is part of the Horticulture/Green Industry Strand.		
			Course = 0.50 Carnegie Unit Credit			
Course Description	The Landscape Construction and Maintenance provides instruction that incorporates plant science, soil and media mixtures, plant identification and optimal environments, and landscape design, installation, and maintenance of new and existing landscapes: Participation in FFA activities and Supervised Agricultural Experience(SAE) projects is an integral course component for leadership development, career exploration, and reinforcement of academic experiences.					
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 #	?	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: Careers	2%	CS.05. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways.	CS.05.02. Examine and choose career opportunities that are matched to personal skills, talents, and career goals in an AFNR pathway of interest.	CS.05.02.01.a. Examine and categorize careers in Greenhouse Production		
Unit 2: Design/Install	9%	PS.04. Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm)	PS.04.01. Evaluating, identifying and preparing plants to enhance an environment.	PS.04.01.01.c. Install plants according to a design plan that uses the proper plants based on the situation and environment. PS.04.01.02.c. Evaluate a design and provide feedback and suggestions	Greenroof Birdhouse Construction Green Roof Birdhouse Slides	

				for improvement (e.g., a floral arrangement, a landscape or a landscape plan, etc.).	
Unit 3: Tree/Shrub Selection	9%	PS.04. Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm).	PS.04.01. Evaluating, identifying and preparing plants to enhance an environment. PS.04.02. Create designs using plants.	PS.04.01.01.b. Demonstrate proper use of plants in their environment (e.g., focal and filler plants in floriculture, heat tolerant and shade plants in a landscape design, etc.). PS.04.01.02.c. Evaluate a design and provide feedback and suggestions for improvement (e.g., a floral arrangement, a landscape or a landscape plan, etc.). PS.04.02.03.b. Research and provide examples of ecological factors incorporated into landscape designs.	
Unit 4: Plant Selection and Maintenance	9%	PS.04. Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm).	PS.04.01. Evaluating, identifying and preparing plants to enhance an environment. PS.04.02. Create designs using plants.	PS.04.01.01.b. Demonstrate proper use of plants in their environment (e.g., focal and filler plants in floriculture, heat tolerant and shade plants in a landscape design, etc.). PS.04.01.02.c. Evaluate a design and provide feedback and suggestions for improvement (e.g., a floral arrangement, a landscape or a landscape plan, etc.).	

				PS.04.02.03.b. Research and provide examples of ecological factors incorporated into landscape designs.	
Unit 5: Turfgrass Selection	3%	PS.04. Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm).	PS.04.01. Evaluating, identifying and preparing plants to enhance an environment. PS.04.02. Create designs using plants.	PS.04.01.01.b. Demonstrate proper use of plants in their environment (e.g., focal and filler plants in floriculture, heat tolerant and shade plants in a landscape design, etc.). PS.04.01.02.c. Evaluate a design and provide feedback and suggestions for improvement (e.g., a floral arrangement, a landscape or a landscape plan, etc.). PS.04.02.03.b. Research and provide examples of ecological factors incorporated into landscape designs.	
Unit 6: Integrated Pest Management	2%	PS.03. Propagate, culture and harvest plants and plant products based on current industry standards.	PS.03.03. Develop and implement a plan for integrated pest management for plant production.	PS.03.03.04.c. Evaluate environmental and consumer concerns regarding pest management strategies.	IPM Slides Plant Pest Tombstone Project
Unit 7: Water Management/Landscape Irrigation	9%				PVC Pipe Project
Unit 8: Landscape Design	2%	PS.04. Apply principles of design in plant systems to enhance an environment (e.g. floral,	PS.04.02. Create designs using plants.	PS.04.02.01.a. Research and summarize the principles and elements of design for use in plant systems.	Landscape Design Project

		forest landscape, and farm)		PS.04.02.02.a. Identify and categorize tools used for design (e.g., computer landscape software, drawing tools, florist tools, etc.). PS.04.02.03.a. Explain the concept of landscape ecology and summarize factors that shape the ecology of a landscape (e.g., composition, structure, function, etc.).	
Unit 9: Business	2%	ABS.04. Develop a business plan for an AFNR business ABS.05. Use sales and marketing principles to accomplish AFNR business objectives.	ABS.04.01. Analyze characteristics and planning requirements associated with developing business plans for different types of AFNR businesses. <i>ELA: RW.HS1.2.3</i> <i>RW.HS2.2.3</i> <i>RW.HS1.3.2</i> <i>RW.HS2.3.2</i> <i>RW.HS1.4.1</i> <i>RW.HS2.4.1</i> ABS.05.03. Assess marketing principles and develop marketing plans to accomplish AFNR business objectives. <i>ELA: RW.HS1.2.3</i> <i>RW.HS2.2.3</i> <i>RW.HS1.3.2</i> <i>RW.HS2.3.2</i> <i>RW.HS1.1.2</i> <i>RW.HS2.1.2</i>	ABS.04.01.03.a. Research and describe the components to include in a business plan for an AFNR business. ABS.05.03.03.a. Research and summarize the purpose, components and process to develop marketing plans for AFNR businesses.	

Unit 10: Tools/Compact Equipment – Maintenance and Operation	9%	PST.01. Apply physical science principles and engineering applications to solve problems and improve performance in AFNR power, structural and technical systems. PST.02. Operate and maintain AFNR mechanical equipment and power systems.	PST.01.02. Apply physical science and engineering principles to design, implement, and improve safe and efficient mechanical systems in AFNR situations. <i>SCIENCE: SC.HS.1.6 SC.HS.1.7 SC.HS.1.9</i> PST.02.01 Perform preventative maintenance and scheduled service to maintain equipment, machinery, and power units used in AFNR settings.	PST.01.02.01.a. Compare and contrast applications of simple machines in AFNR related mechanical systems. PST.01.02.02.c. Devise and document processes to safely implement and evaluate the safe use of AFNR related tools, machinery and equipment. PST.01.02.03.b. Select, maintain and demonstrate the proper use of tools, machines and equipment used in different AFNR related mechanical systems. PST.02.01.01.a. Maintain the cleanliness and appearance of equipment, machinery and power units used in AFNR power, structural and technical systems to assure proper functionality. PST.02.01.02.b. Service filtration systems and maintain fluid levels on equipment, machinery and power units in accordance with operator's manuals.	
Unit 11: Hardscape	4%	PS.04. Apply principles of design in plant systems to enhance an	PS.04.01. Evaluating, identifying and utilizing hardscape materials to	PS.04.01.01.b. Demonstrate proper use of hardscape in their	

		environment (e.g. floral, forest landscape, and farm)	enhance an environment. PS.04.02. Performance Indicator: Create designs using plants. PST.04.02 Create designs using plants.	environment (e.g., walls, paths, rock, mulch, etc.). PS.04.02.03.c. Utilize green technologies and sustainable practices that prevent or limit negative environmental impacts.	
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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 design, install, and maintain landscapes; evaluate site conditions; select appropriate plant materials; and solve landscape construction and maintenance challenges through laboratory activities, field experiences, and project-based learning.

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 landscape design plans, plant identification guides, soil and media recommendations, irrigation specifications, construction documents, maintenance schedules, and industry publications to understand landscape construction and maintenance practices.

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 landscape design, site analysis, plant identification, soils and media, hardscape materials, irrigation systems, landscape installation, maintenance practices, and green industry careers to communicate effectively in landscape construction settings.

Standard 3: Writing and Composition

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

Students evaluate landscape design solutions, plant selection, installation methods, irrigation practices, and maintenance strategies, defending recommendations using site assessments, industry standards, and scientific evidence.

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

Students develop landscape design proposals, installation plans, maintenance schedules, irrigation plans, cost estimates, and technical reports explaining landscape construction and maintenance practices using scientific evidence and industry standards.

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 site conditions, plant species, soil characteristics, irrigation requirements, construction materials, sustainable landscape practices, and maintenance techniques to develop evidence-based landscape plans that promote functional, aesthetically pleasing, and environmentally responsible landscapes.

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