

Colorado AFNR Course Scope and Sequence

<b>Course Name</b>	<b>Landscape Construction and Maintenance</b>		<b>Course Details</b>	Level 4 advanced course in the Plant Science pathway. This course is part of the Horticulture/Green Industry Strand.		
			<b>Course = 0.50 Carnegie Unit Credit</b>			
<b>Course Description</b>	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.					
<b>Note:</b>	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 <a href="https://www.cde.state.co.us/standardsandinstruction/essentialskills">https://www.cde.state.co.us/standardsandinstruction/essentialskills</a>						
Unit Number, Title and Brief Description	Suggested % of Instructional Time	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration	
<b>Unit 1: Careers</b>	2%	<b>CS.05.</b> Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways.	<b>CS.05.02.</b> Examine and choose career opportunities that are matched to personal skills, talents, and career goals in an AFNR pathway of interest.	<b>CS.05.02.01.a.</b> Examine and categorize careers in Greenhouse Production		
<b>Unit 2: Design/Install</b>	9%	<b>PS.04.</b> Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm)	<b>PS.04.01.</b> Evaluating, identifying and preparing plants to enhance an environment.	<b>PS.04.01.01.c.</b> Install plants according to a design plan that uses the proper plants based on the situation and environment.  <b>PS.04.01.02.c.</b> Evaluate a design and provide feedback and suggestions for improvement (e.g., a		

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

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

				<p><b>PS.04.02.02.a.</b> Identify and categorize tools used for design (e.g., computer landscape software, drawing tools, florist tools, etc.).</p> <p><b>PS.04.02.03.a.</b> Explain the concept of landscape ecology and summarize factors that shape the ecology of a landscape (e.g., composition, structure, function, etc.).</p>	
<b>Unit 9: Business</b>	2%	<p><b>ABS.04.</b> Develop a business plan for an AFNR business</p> <p><b>ABS.05.</b> Use sales and marketing principles to accomplish AFNR business objectives.</p>	<p><b>ABS.04.01.</b> 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></p> <p><b>ABS.05.03.</b> 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></p>	<p><b>ABS.04.01.03.a.</b> Research and describe the components to include in a business plan for an AFNR business.</p> <p><b>ABS.05.03.03.a.</b> Research and summarize the purpose, components and process to develop marketing plans for AFNR businesses.</p>	
<b>Unit 10: Tools/Compact Equipment – Maintenance and Operation</b>	9%	<b>PST.01.</b> Apply physical science principles and engineering	<b>PST.01.02.</b> Apply physical science and engineering principles to	<b>PST.01.02.01.a.</b> Compare and contrast applications of simple machines in	

		<p>applications to solve problems and improve performance in AFNR power, structural and technical systems.</p> <p><b>PST.02.</b> Operate and maintain AFNR mechanical equipment and power systems.</p>	<p>design, implement, and improve safe and efficient mechanical systems in AFNR situations. <i>SCIENCE: SC.HS.1.6</i> <i>SC.HS.1.7</i> <i>SC.HS.1.9</i></p> <p><b>PST.02.01</b> Perform preventative maintenance and scheduled service to maintain equipment, machinery, and power units used in AFNR settings.</p>	<p>AFNR related mechanical systems.</p> <p><b>PST.01.02.02.c.</b> Devise and document processes to safely implement and evaluate the safe use of AFNR related tools, machinery and equipment.</p> <p><b>PST.01.02.03.b.</b> Select, maintain and demonstrate the proper use of tools, machines and equipment used in different AFNR related mechanical systems.</p> <p><b>PST.02.01.01.a.</b> Maintain the cleanliness and appearance of equipment, machinery and power units used in AFNR power, structural and technical systems to assure proper functionality.</p> <p><b>PST.02.01.02.b.</b> Service filtration systems and maintain fluid levels on equipment, machinery and power units in accordance with operator's manuals.</p>	
<b>Unit 11: Hardscape</b>	4%	<b>PS.04.</b> Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm)	<b>PS.04.01.</b> Evaluating, identifying and utilizing hardscape materials to enhance an environment. <b>PS.04.02.</b> Performance Indicator:	<b>PS.04.01.01.b.</b> Demonstrate proper use of hardscape in their environment (e.g., walls, paths, rock, mulch, etc.).	

			<p>Create designs using plants.</p> <p><b>PST.04.02</b> Create designs using plants.</p>	<p><b>PS.04.02.03.c.</b> Utilize green technologies and sustainable practices that prevent or limit negative environmental impacts.</p>	
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**CAS Academic Standards Alignment:** Online Version: <https://www.cde.state.co.us/apps/standards/>; Download version: <https://www.cde.state.co.us/apps/standards/>

**Reading, Writing, and Communicating:** (RST/WHST are Common Core Standards aligned; <http://www.corestandards.org/ELA-Literacy/RI/introduction-for-6-12/>)

- RW.HS1.1.2 – Organize and develop credible presentations tailored to purpose and audience.
- RW.HS2.1.2 – Integrate credible, accurate information into appropriate media and formats to meet an audience’s needs.
- RW.HS1.2.3 – Utilize context, parts of speech, grammar, and word choice to understand narrative, argumentative, and informational texts.
- RW.HS2.2.3 – Understand how language influences comprehension of narratives, argumentative, and informational texts.
- RW.HS1.3.2 – Write informative/explanatory texts using complex ideas and organizational structures and features that are useful to audience comprehension.
- RW.HS2.3.2 – Write informational/explanatory texts to examine and convey complex ideas through the effective selection, organization, and analysis of content.
- RW.HS1.4.1 – Synthesize multiple, authoritative literary and/or informational sources, creating cohesive research projects that show an understanding of the subject.
- RW.HS2.4.1 – Synthesize multiple, authoritative literary and/or informational sources to answer questions or solve problems, producing well-organized and developed research projects that defend information, conclusions, and solutions.

**Math:**

**Science:**

- SC.HS.1.6 – Energy is a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system.
- SC.HS.1.7 – Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems.
- SC.HS.1.9 -Although energy cannot be destroyed, it can be converted to less useful forms as it is captured, stored, and transferred.

**Essential Skills:**

Problem Solver:

- **Critical Thinking and Analysis:** The ability to apply a deliberate process of identifying problems, gathering information, and weighing possible solutions, including: making choices rooted in understanding patterns, cause-and-effect relationships, and the impacts that a decision can have on the individual and others.

- Creativity and innovation: the ability to demonstrate curiosity and imagination through experimenting with new and emerging ideas.

### Community Member:

- Civic Engagement: The ability to develop and apply knowledge, skills, and habits gained from experiences – within communities of diverse perspectives – to address issues, affect change, and/or solve problems.

### Empowered Individual:

- Self-Awareness: the ability to understand one's own emotions, thoughts, and values, and how personal actions and emotions influence behavior across contexts, including: the capacity to recognize one's strength and limitations with a well-grounded sense of confidence and purpose.
- Career Awareness: The ability to apply the knowledge and understanding of how one's dreams, experiences, and interests translate into career fulfillment and lifelong pursuits in local, regional, national, and global career pathways and opportunities.