

Colorado CTE Course – Scope and Sequence

Course Name	Watershed Management		Course Details	Level 3 course in the Natural Resources / Environmental Science pathway.		
			Course = 0.50 Carnegie Unit Credit			
Course Description	An course for students pursuing careers in Natural Resources and Environmental Sciences. This course expands student learning to the principals of Colorado water and the management practices. Students will gain knowledge in career development, leadership, personal development, communications, ecology, Colorado water law, and meteorology.					
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 #	18549	Schedule calculation based on 60 calendar days of a 90-day semester. Scope and sequence allows for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.				
Instructional Unit Topic	Suggested % of Instructional Time	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration	
Analyze the different elements in an Ecosystem and the relationship of those interactions in relation to watersheds.	10	NRS.01. Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals.	NRS.01.01. Apply methods of classification to examine natural resource availability and ecosystem function in a particular region.	<p>NRS.01.01.01.a. Summarize and classify the different kinds of natural resources using common classification schemes (e.g., living versus non-living, renewable versus nonrenewable, native versus introduced, etc.).</p> <p>NRS.01.01.02.a. Summarize the components that comprise all ecosystems.</p> <p>NRS.01.01.02.b. Analyze the interdependence of organisms within an ecosystem (e.g., food webs, niches, impact of keystone</p>		

				<p>species, etc.) and assess the dependence of organisms on nonliving components (climate, geography, energy flow, nutrient cycling, etc.).</p> <p>NRS.01.01.02.c. Conduct analyses of ecosystems and document the interactions of living species and non-living resources.</p> <p>NRS.01.01.03.b. Analyze how biodiversity develops through evolution, natural selection and adaptation; explain the importance of biodiversity to ecosystem function and availability of natural resources.</p> <p>NRS.01.01.03.c. Evaluate biodiversity in ecosystems and devise strategies to enhance the function of an ecosystem and the availability of natural resources by increasing the level of biodiversity.</p>	
<p>Understanding the specific ecology concepts and principles of water ecosystems</p>	12	<p>NRS.01. Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals.</p>	<p>NRS.01.04. Apply ecological concepts and principles to aquatic natural resource systems.</p>	<p>NRS.01.04.01.a. Summarize the roles and properties of watersheds.</p> <p>NRS.01.04.01.b. Assess the function of watersheds and their effect on natural resources.</p>	

				<p>NRS.01.04.01.c. Evaluate and defend the importance of watersheds to ecosystem function.</p> <p>NRS.01.04.02.a. Examine and describe the importance of groundwater and surface water to natural resources.</p> <p>NRS.01.04.02.b. Analyze how different classifications of ground and surface water affect ecosystem function.</p> <p>NRS.01.04.02.c. Devise and apply strategies to manage, protect, enhance or improve sources of groundwater or surface water based on its properties.</p> <p>NRS.01.04.03.a. Compare and contrast riparian zones and riparian buffers based on their unction.</p> <p>NRS.01.04.03.b. Assess techniques used in the creation, enhancement and management of riparian zones and riparian buffers.</p> <p>NRS.01.04.03.c. Devise and apply strategies for the creation, enhancement and management</p>	
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				of riparian zones and riparian buffers.	
<p>Define the importance of water laws and government agencies in managing watersheds.</p>	16	<p>NRS.02. Analyze the interrelationships between natural resources and humans.</p>	<p>NRS.02.01. Examine and interpret the purpose, enforcement, impact and effectiveness of laws and agencies related to natural resource management, protection, enhancement and improvement (e.g., water regulations, game laws, historic preservation laws, environmental policy, etc.).</p>	<p>NRS.02.01.01.a. Distinguish between the types of laws associated with natural resources systems.</p> <p>NRS.02.01.01.b. Analyze the structure of laws associated with natural resources systems.</p> <p>NRS.02.01.01.c. Evaluate the impact of laws associated with natural resources systems (e.g., mitigation, water regulations, carbon emissions, game limits, invasive species, etc.).</p> <p>NRS.02.01.02.a. Distinguish between the types of agencies associated with natural resources systems.</p> <p>NRS.02.01.02.b. Analyze the specific purpose of agencies associated with natural resources systems.</p> <p>NRS.02.01.02.c. Evaluate the impact and effectiveness of agencies associated with natural resources systems (e.g., regulation of consumption, prevention of damage to natural</p>	

			<p>NRS.02.03. Analyze how modern perceptions of natural resource management, protection, enhancement and improvement change and develop over time.</p>	<p>resources systems, management of ecological interactions, etc.).</p> <p>NRS.02.03.01.a. Summarize and categorize the different social considerations in regards to the use of natural resources (e.g., public versus private, laws and regulations, economics, green technology, etc.).</p> <p>NRS.02.03.01.b. Analyze how social considerations can affect the use and sustainability of natural resources.</p>	
<p>Evaluate out outdoor recreation impacts water availability and quality.</p>	12	<p>NRS.02. Analyze the interrelationships between natural resources and humans.</p>	<p>NRS.02.02. Assess the impact of human activities on the availability of natural resources.</p>	<p>NRS.02.02.01.a. Summarize the relationship between natural resources, ecosystems and human activity.</p> <p>NRS.02.02.01.b. Assess and explain how different kinds of human activity affect the use and availability of natural resources (i.e. agriculture, industry, transportation, etc.).</p> <p>NRS.02.02.01.c. Evaluate how the availability of natural resources can be improved through changes to human activity.</p>	

		<p>NRS.03. Develop plans to ensure sustainable production and processing of natural resources.</p>	<p>NRS.03.01. Sustainably produce, harvest, process and use natural resource products (e.g., forest products, wildlife, minerals, fossil fuels, shale oil, alternative energy, recreation, aquatic species, etc.).</p>	<p>NRS.02.02.03.a. Examine and describe the manner in which modern lifestyles are related to the depletion of natural resources.</p> <p>NRS.02.02.03.b. Identify solutions to improve the sustainability of modern lifestyles.</p> <p>NRS.02.02.03.c. Evaluate how modern lifestyles affect resource consumption and energy use and devise a strategy to prevent the complete loss of a natural resource.</p> <p>NRS.03.01.07.a. Research and summarize how recreational uses of natural resources can be changed to improve sustainability.</p> <p>NRS.03.01.07.b. Assess different options for improving the sustainability of outdoor recreation based on its impact on natural resources and likelihood of acceptance.</p> <p>NRS.03.01.07.c. Evaluate an example of outdoor recreation and develop suggestions for how that activity can be made more sustainable in a manner that is</p>	
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<p>Create a communication to promote water conservation.</p>	<p>12</p>	<p>NRS.02. Analyze the interrelationships between natural resources and humans.</p>	<p>NRS.02.05. Communicate information to the public regarding topics related to the management, protection, enhancement, and improvement of natural resources.</p>	<p>NRS.02.05.01.a. Examine and describe ways in which a message regarding natural resources may be communicated to the public through standard media sources (e.g., press, radio, TV, public appearances, etc.).</p> <p>NRS.02.05.01.b. Assess the effectiveness of different methods for communicating natural resource messages.</p> <p>NRS.02.05.01.c. Devise and implement a strategy for communicating a natural resources message through media.</p>	

				<p>NRS.02.05.02.a. Research and summarize how social media and the Internet have changed how people perceive and utilize natural resources (e.g., greater awareness of conservation issues, calls to action, etc.).</p> <p>NRS.02.05.02.b. Assess how to most effectively communicate a message about the conservation, management, enhancement and improvement of natural resources via social media and the Internet.</p> <p>NRS.02.05.02.c. Anticipate and predict how messages about the conservation, management, enhancement and improvement of natural resources will change because of social media and the Internet.</p> <p>NRS.02.05.03.a. Examine and describe how communication can be used to influence behavior, call people to action and instill a sense of civic behavior related to the conservation, management, enhancement and improvement of natural resources.</p>	
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				<p>NRS.02.05.03.b. Analyze and summarize examples of how communication can be used to influence behavior, call people to action and instill a sense of civic behavior related to the conservation, management, enhancement and improvement of natural resources.</p> <p>NRS.02.05.03.c. Create a communication plan to influence the behavior of people, call people to action and instill a sense of civic behavior related to the conservation, management, enhancement and improvement of natural resources.</p>	
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