Advanced Natural Resources Capstone013001…6035

Course Description

Curriculum emphasizes advanced scientific principles and processes involved in conserving and/or improving natural resources such as air, water, land, forestry, wildlife, and energy.

Course Code:

Program(s) of Study to which This Course Applies

- Environmental and Natural Resources

Course Framework	Reference Standards	Academic Crosswalk
Standard 1. Students will demonstrate competence in the application of scientific principles and techniques relating to renewable natural resources.	NAS (NRS.01)	[TBD by NDE]
Benchmark 1.1 Develop conceptual models for renewable resources. Sample performance indicators: • Conduct a field inventory of local renewable resources. • Design a poster of migratory patterns.	NAS (NRS.02.06) NAS (NRS.01)	
Benchmark 1.2Summarize the impact and dependence of humans on renewable resources. Sample performance indicators: • Analyze the way management affects the environment and human needs. • Analyze the way in which human activities influence natural resource management.	NAS (NRS.02.06) NAS (NRS.01)	[TBD by NDE]

• Test local water samples for pollution. • Research natural resources affected by environmental pollution.		
Standard 2. Students will demonstrate competence in the application of scientific principles and techniques relating to non-renewable natural resources.	NAS (NRS.01)	[TBD by NDE]
Benchmark 2.1 Debatethe impact of conventional versus alternative energy sources. Sample performance indicators: • Calculate fuel equivalents of energy sources. • Discuss emission management strategies. • Compare and contrast energy sources.	NAS (ESS.05.01) NAS (NRS.02.06) NAS (NRS.01)	
Benchmark 2.2 Develop conceptual models for nonrenewable resources. Sample performance indicators: • Create a chart about carbon credits. • Trace the transformation of energy within a system.	NAS (ESS.05.01) NAS (NRS.02.06) NAS (NRS.01)	
Benchmark 2.3 Summarize the impact and dependence of humans on nonrenewable resources. Sample performance indicators: • Research natural resources affected by environmental pollution. • Map human population growth against nonrenewable resource availability.	NAS (ESS.05.01) NAS (NRS.02.06) NAS (NRS.01)	[TBD by NDE]
Standard 3. Students will demonstrate competence in the application of scientific principles and techniques related to the conservation of natural resources.	NAS (NRS.02)	[TBD by NDE]
Benchmark 3.1 Research natural resource careers. Sample performance indicators:	NE (AE Link 12.7.2) NE (AE Link 12.7.3) NAS (ESS.03)	

• Develop a natural resources related SAE. • Identify career opportunities in Natural Resources. • Job shadow a Natural Resources career employee.	NAS (NRS.02.06)	
Benchmark 3.2 Debate economic and social values impacting natural resources. Sample performance indicators: • Discuss the use and abuse of Natural Resources. • Debate irrigation issues and ground water rights.	NE (AE Link 12.7.2) NE (AE Link 12.7.3) NAS (ESS.03) NAS (NRS.02.06)	
Benchmark 3.3 Apply scientific principles to solve environmental problems. Sample performance indicators: • Create a plan to reduce the impact of invasive species. • Guest speaker to discuss environmental issues.	NE (AE Link 12.7.2) NE (AE Link 12.7.3) NAS (ESS.03) NAS (NRS.02.06)	
Benchmark 3.4 Apply natural resource policies, laws and regulations. Sample performance indicators: • Interpret laws relating to Natural Resources. • Demonstrate mitigation techniques for natural resources.	NE (AE Link 12.7.2) NE (AE Link 12.7.3) NAS (ESS.03) NAS (NRS.02.06)	[TBD by NDE]
Standard 4. Students will demonstrate competence in the application of scientific principles and techniques related to the management of natural resources.	NAS (NRS.02)	[TBD by NDE]
Benchmark 4.1 Analyze fish and wildlife population dynamics and habitat manipulation. Sample performance indicators: • Formulate a management plan for increase wildlife populations. • Explain wildlife management techniques.	NAS (NRS .03) NAS (NRS.05) NAS (ESS.01) NAS (NRS.03)	

Benchmark 4.2 Explain natural resource information to the public. Sample performance indicators: • Communicate a natural resource message through the media or public appearances. • Educate elementary and middle school students.	NAS (NRS .03) NAS (NRS.05) NAS (ESS.01) NAS (NRS.03)	
Benchmark 4.3 Analyze and interpret environmental data. Sample performance indicators: • Conduct a wildlife survey to predict populations. • Analyze soil and water test data.	NAS (NRS .03) NAS (NRS.05) NAS (ESS.01) NAS (NRS.03)	[TBD by NDE]
Benchmark 4.4 Apply entrepreneurship principles to ecotourism. Sample performance indicators: • Process harvested wildlife. • Develop a small business plan.	NAS (NRS .03) NAS (NRS.05) NAS (ESS.01) NAS (NRS.03)	

Reference Standards Sources

- NAS = National Agriculture Standards
- TX = Texas Essential Knowledge and Skills for Career and Technical Education
- CA = California Forestry and Natural Resources Pathway
- IA = Iowa Content Standards and Benchmarks
- NE = Links to Standards

Other Information

Suggestions for innovative teaching and learning strategies:	• Trap Shooting • Archery • Fishing • Camping • Raising Game Birds • Aquaculture

	• Taxidermy • Field Trips (State Park, Bird Watching, Hatchery)
Related assessments:	• Hunter Education • Boating Safety • Fishing Education
Extended learning opportunities:	• Envirothon • Land Judging • Range Judging • Natural Resources Speaking Leadership Skills Events • Natural Resources Contest Career Development Events • Proficiency Awards • Supervised Agricultural Experience (SAE) • Range Boards • 4-H projects • Safety Camp • View a prescribed burn