

Agriculture, Food & Natural Resources Career Cluster
Natural Resources Management
Course Number: 03.41100

Course Description:

This course introduces conservation management and maintenance of natural resources and good stewardship of air, soil, water, land, fish, and wildlife resources for economic, recreation, and health purposes. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities.

Course Standard 1

AFNR-NRM-1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths

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Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	

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Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6 Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

Course Standard 2

AFNR-NRM-2

Explore, develop, and implement the comprehensive program of agricultural education, learn and demonstrate safe working habits in the agriculture lab and work sites, demonstrate selected competencies in leadership through the FFA and agricultural industry organizations, and develop plans for a Supervised Agricultural Experience Program (SAEP).

- 2.1 Illustrate the relationship of the FFA within the Agricultural Education model and describe the role and function of the organizational structure from the chapter to national level.
- 2.2 Design, implement, and document SAEP by recording steps, skills acquired, and financial information.
- 2.3 Demonstrate leadership and personal development skills through participation in the FFA.
- 2.4 Analyze skills, education requirements, income, and advantages and disadvantages of careers in natural resources management.
- 2.5 Explore the professional agricultural organizations associated with the course content.
- 2.6 Demonstrate safety practices when working in an outdoor environment.

Course Standard 3

AFNR-NRM-3

Recognize the importance of natural resources, determine demands, and identify the role of government in natural resources management.

- 3.1 Define natural resources (renewable and non-renewable) and explain the importance to humans.
- 3.2 Describe the effects of human activity on natural resources.
- 3.3 Compare and contrast conservation and preservation as related to natural resource management.
- 3.4 Identify government agencies involved in the management of natural resources.
- 3.5 List and describe specific government programs and regulations pertaining to natural resource management.

Course Standard 4

AFNR-NRM-4

Discuss and identify basic components of ecosystems, describe the relationship of those components to one another, and identify effects of human activities on ecosystems.

- 4.1 Discuss and define the elements and concepts of ecosystems.
- 4.2 Describe how ecosystems are impacted by human activity.
- 4.3 Describe and explain the elements and concepts of a forest ecosystem.
- 4.4 Describe how energy is transferred from one organism to another using the concepts of producer, consumer, decomposer, food web, food chain, and biotic pyramid.
- 4.5 Compare and contrast the concepts of sustainability and how multiple uses can help maintain Georgia's forest ecosystems.
- 4.6 Explain water cycles and describe aquatic ecosystems.
- 4.7 Identify types of wetlands and explain how they are impacted by human activity.

Course Standard 5

AFNR-NRM-5

Describe the properties of soil and nutrient analysis, determine the capability of the land and the effects of erosion, and describe soil stewardship in Georgia.

- 5.1 Explain the development of soil and how it functions.
- 5.2 Analyze the importance of slope, soil texture, erosion, and water movement in determining land capability and land use.
- 5.3 Differentiate between mechanical and vegetative soil erosion control.
- 5.4 Determine the types of soil degradation, as well as the underlying factors, such as erosion, agricultural pesticides and chemicals, and waste disposal.

Course Standard 6

AFNR-NRM-6

Determine the use of water resources, describe the hydrologic cycle and properties of water, and explain watersheds and their functions, as well as the reasons for monitoring water quality.

- 6.1 Describe the factors that affect water quality.
- 6.2 Identify possible factors that distort the natural balance of water quality.
- 6.3 Describe human activities that improve and maintain the quality of water.
- 6.4 Analyze industrial activities designed to improve and maintain water quality.
- 6.5 Analyze the impact that wetlands have on water quality.
- 6.6 Describe the association between water quality and watersheds.
- 6.7 Identify soil conservation practices which improve and maintain water quality.
- 6.8 Debate the impact of water conservation on water quality.

Course Standard 7

AFNR-NRM-7

Identify sources of waste and describe methods and procedures for managing that minimize environmental impact.

- 7.1 Discuss the different types of waste, as well as the criteria for classifying waste.
- 7.2 Explore the effect of agricultural pesticides.
- 7.3 Interpret the effect waste disposal has on soil properties and characteristics.
- 7.4 Explain how waste is managed, and different methods to minimize environmental impact.
- 7.5 Research ways that soil degradation could be limited.
- 7.6 Describe the steps in municipal wastewater treatment and handling.
- 7.7 Describe the different animal waste treatment and handling systems.

Course Standard 8

AFNR-NRM-8

Define wildlife, explain the importance of wildlife and wildlife management, and identify the role of government and private wildlife organizations in managing wildlife resources.

- 8.1 Define wildlife and differentiate between game and non-game species.
- 8.2 Describe wildlife management and compare and contrast wildlife management to other agricultural sciences.
- 8.3 Explain the importance of wildlife and the values society places on wildlife populations.
- 8.4 Report and debate the historical American attitudes concerning wildlife as a resource.
- 8.5 Describe major trends in wildlife management philosophies and practices.
- 8.6 Outline and explain the meaning, purpose, and importance of major pieces of U.S. legislation pertaining to the conservation of wildlife resources.

- 8.7 Identify groups and organizations with concern for wildlife and explain the official position regarding hunting and other wildlife management techniques.
- 8.8 Compare and contrast hunting to other conservation practices.
- 8.9 Demonstrate appropriate responses to hunting and firearm accidents.
- 8.10 Identify means by which hunting and firearms accidents may be prevented.
- 8.11 Demonstrate an understanding of written laws regulating hunting activity.
- 8.12 Demonstrate an understanding of hunter ethics and the importance to the well-being of wildlife.

Course Standard 9

AFNR-NRM-9

Describe an awareness of interrelationships in the forest environment between plants, soil, animals, water, and man.

- 9.1 Identify characteristics of forest soils.
- 9.2 Describe and give examples of Best Management Practices (BMP).
- 9.3 Explain the relationships between BMPs and the forest environment.
- 9.4 Discuss environmental concerns of forest production.
- 9.5 Analyze practices that benefit the environment.
- 9.6 Identify wetlands and explain the benefits of wetlands.
- 9.7 Explain policies concerning wetland use.
- 9.8 List endangered plant species of Georgia woodlands.
- 9.9 List endangered animal species of Georgia woodlands.
- 9.10 Explain policies concerning endangered species.

Course Standard 10

AFNR-NRM-10

Explain the importance of the government's natural resources and recreational programs.

- 10.1 Discuss the possibilities on public land.
- 10.2 Explain the federal government's main natural resource and recreation programs.
- 10.3 Discuss public access rights to shoreline, beaches, and water.
- 10.4 Explain how our public lands are misused and abused.

Course Standard 11

AFNR-NRM-11

Identify safety practices in land-based activities, such as hunting and 4-wheeler riding, and water-based activities, such as fishing and boating.

- 11.1 Discuss and practice the ten commandments of gun safety.
- 11.2 Explain the code of ethics for hunters.
- 11.3 List the correct safety procedures for using bows and arrows.
- 11.4 Explain safety procedures used in riding four wheelers.
- 11.5 Explain basic survival and first-aid techniques.
- 11.6 Explain safe boating procedures.
- 11.7 Describe the common traffic rules for boats.
- 11.8 List and demonstrate the water skiing signals.