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Fall 2008

**PROGRAM CONCENTRATION: Agriculture**  
**CAREER PATHWAY: Forestry and Natural Resources**  
**COURSE TITLE: Natural Resources Management**

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.

**AG-NR-1. Students will become oriented to the comprehensive program of agricultural education, learn to work safely 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 (SAE) program.**

- a. Explain the role of the Agriculture Education program and the FFA in personal development.
- b. Demonstrate knowledge learned through a Supervised Agricultural Experience (SAE) program.
- c. Develop leadership and personal development skills through participation in the FFA.
- d. Explore career opportunities in agriscience through the FFA and Agriculture Education Program.
- e. Explore the professional agricultural organizations associated with the course content.

***Academic Standards:***

*ELA10C1. The student demonstrates understanding and control of the rules of the English language, realizing that usage involves the appropriate application of conventions and grammar in both written and spoken formats.*

*SCSh9. Students will enhance reading in all curriculum areas.*

*ELA9RL5. The student researches the life of a particular person as it is represented in a variety of texts.*

*ELA10LSV1 (d). Actively solicits another person's comments or opinion. (e) Offers own opinion forcefully without domineering.*

*ELA10LSV1 (i). Employs group decision-making techniques such as brainstorming or a problem-solving sequence (e.g., recognizes problem, defines problem, identifies possible solutions, selects optimal solution, implements solution, evaluates solution).*

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*ELA10LSV1 (e). Offers own opinion forcefully without domineering; (f) Contributes voluntarily and responds directly when solicited by teacher or discussion leader; (g) Gives reasons in support of opinions expressed.*

**AG-NR-2. Students will explain the importance of natural resources, determine demands, and identify the role of government in natural resources management.**

- a. Define natural resources and explain importance to humans.
- b. Describe the effects of human activity on natural resources.
- c. Compare and contrast conservation and preservation as related to natural resource management.
- d. Identify government agencies involved in the management of natural resources.
- e. List and describe specific government programs and regulations pertaining to natural resource management.

**Academic Standards:**

*ELA9LSV1. The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*ELA9LSV2. The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

*SCSh2. Students will investigate the flow of energy and cycling of matter within an ecosystem and relate these phenomena to human society.*

*ELA9RL5. The student researches the life of a particular person as it is represented in a variety of texts.*

*SCSh9. Students will enhance reading in all curriculum areas.*

**AG-NR-3. Students will identify basic components of ecosystems, describe the relationship of those components to one another, and identify effects of human activities on ecosystems.**

- a. Define the elements and concepts of ecosystems.
- b. Describe how ecosystems are impacted by human activity.
- c. Describe and explain the elements and concepts of a forest ecosystem.
- d. Describe how the concepts of sustainability and multiple uses can help maintain Georgia's forest ecosystems.

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- e. Explain water cycles and describe aquatic ecosystems.
- f. Identify types of wetlands and explain how they are impacted by human activity.

**Academic Standards:**

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ELA9LSV2 . *The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

SCSh2. *Students will investigate the flow of energy and cycling of matter within an ecosystem and relate these phenomena to human society.*

SCSh9. *Students will enhance reading in all curriculum areas.*

SEV3. *Students will describe stability and change in ecosystems.*

SEV4. *Students will understand and describe availability, allocation and conservation of energy and other resources.*

SEV5. *Students will recognize that human beings are part of the global ecosystem and will evaluate the effects of human activities and technology on ecosystems.*

SSWG1. *The student will explain the physical aspects of geography.*

**AG-NR-4. Students will 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.**

- a. Explain the development of soil and how it functions.
- b. Describe soil characteristics and how they affect the use of land.
- c. Differentiate between mechanical and vegetative soil erosion control.
- d. Identify government agencies and programs and their involvement in soil conservation.

**Academic Standards:**

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ELA9LSV2. *The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

SCSh2. *Students will investigate the flow of energy and cycling of matter within an ecosystem and relate these phenomena to human society.*

SCSh9. *Students will enhance reading in all curriculum areas.*

SES3. *Students will explore the actions of water, wind, ice, and gravity that create landforms and systems of landforms (landscapes).*

SEV2. *Students will demonstrate an understanding that the Earth is one interconnected system.*

SES4. *Students will understand how rock relationships and fossils are used to reconstruct the Earth's past.*

SSWG1. *The student will explain the physical aspects of geography.*

**AG-NR-5. Students will determine the use of water resources, describe the hydrologic cycle and properties of water, explain watersheds and their functions, as well as the reasons for monitoring water quality.**

- a. Identify and describe the factors which affect water quality.
- b. Identify possible factors that distort the natural balance of water quality.
- c. Identify human activities that improve and maintain the quality of water.
- d. Analyze industrial activities designed to improve and maintain water quality.
- e. Analyze the impact that wetlands have on water quality.
- f. Describe the association between water quality and watersheds.
- g. Identify soil conservation practices which improve and maintain water quality.
- h. Describe the impact of water conservation on water quality.

**Academic Standards:**

ELA9LSV1. *The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

ELA9LSV2 . *The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

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*SCSh9. Students will enhance reading in all curriculum areas.*

*SES3. Students will explore the actions of water, wind, ice, and gravity that create landforms and systems of landforms (landscapes).*

*SEV2. Students will demonstrate an understanding that the Earth is one interconnected system.*

**AG-NR-6. Students will identify sources of waste and describe methods and procedures for managing waste that minimize environmental impact.**

- a. Explain the effect of agricultural pesticides.
- b. Interpret the effect waste disposal has on soil properties and characteristics.
- c. Consider ways soil degradation could be limited.
- d. Describe the steps in municipal wastewater treatment and handling.
- e. Describe different animal waste treatment and handling systems.

***Academic Standards:***

*ELA9LSV1. The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*ELA9LSV2. The student formulates reasoned judgments about written and oral communication in various media genres. The student delivers focused, coherent, and polished presentations that convey a clear and distinct perspective, demonstrate solid reasoning, and combine traditional rhetorical strategies of narration, exposition, persuasion, and description.*

*SCSh2. Students will investigate the flow of energy and cycling of matter within an ecosystem and relate these phenomena to human society.*

*SCSh9. Students will enhance reading in all curriculum areas.*

*SEV 2. Students will demonstrate an understanding that the Earth is one interconnected system.*

**CTAE Foundation Skills**

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations,

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these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

**CTAE-FS-1 Technical Skills:** Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

**CTAE-FS-2 Academic Foundations:** Learners achieve state academic standards at or above grade level.

**CTAE-FS-3 Communications:** Learners use various communication skills in expressing and interpreting information.

**CTAE-FS-4 Problem Solving and Critical Thinking:** Learners define and solve problems, and use problem-solving and improvement methods and tools.

**CTAE-FS-5 Information Technology Applications:** Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

**CTAE-FS-6 Systems:** Learners understand a variety of organizational structures and functions.

**CTAE-FS-7 Safety, Health and Environment:** Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

**CTAE-FS-8 Leadership and Teamwork:** Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

**CTAE-FS-9 Ethics and Legal Responsibilities:** Learners commit to

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work ethics, behavior, and legal responsibilities in the workplace.

**CTAE-FS-10 Career Development:** Learners plan and manage academic-career plans and employment relations.

**CTAE-FS-11 Entrepreneurship:** Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.