Georgia CTAE: Agriculture, Food & Natural Resources Career Cluster

Forest Science (2013)

Demonstrate employability skills required by business and industry. AFNR-FS-1	1 **Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.** 1.1
	2 **Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.** 1.2
	3 **Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.** 1.3
	4 **Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.** 1.4
	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.** 1.5
	6 **Present a professional image through appearance, behavior and language.** 1.6
Orient and apply the comprehensive program of agricultural education, learn to work safely in the agricultural 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). AFNR-FS-2	1 **Summarize the role of the Agricultural Education program and the FFA in personal development.** 2.1
	2 **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
	3 **Interpret basic FFA information such as the emblem, colors, motto, mission, salute, behavior and official dress.** 2.3
	4 **Demonstrate communication skills individually and within group situations by using public speaking skills and parliamentary procedure abilities.** 2.4
	5 **Design personal leadership plan that includes opportunities for personal development through student, chapter, and community related activities.** 2.5
Evaluate human needs and demonstrate the role of forestry in me hu	1 **Differentiate between renewable and nonrenewable natural resources.** 3.1
	2 **Research the employment opportunities in the forestry industry.** 3.2
	dentify products made from trees. 3.3

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currently, and in the future. AFNR-FS-3	4 Discuss historical events related to forestry in the United States. 3.4
Recognize potential hazards in forestry and identify procedures for first-aid and safety. AFNR-FS-4	1 Identify hazards associated with the outdoor environment. 4.1
	2 Demonstrate safety practices when working in an outdoor environment. 4.2
	3 Demonstrate appropriate responses to accidents and injuries that occur in an outdoor environment. 4.3
	4 Differentiate between stinging insects and beneficial insects in Georgia forests and discuss examples of each type. 4.4
	5 Describe techniques used to manage pests of forest plants. 4.5
	6 Differentiate between venomous spiders and snakes from non-venomous ones in Georgia forests and discuss examples of each type. 4.6
Compare and contrast Georgia trees and explain their environmental and economic value. AFNR-FS-5	1 Identify the different species of trees native to Georgia. 5.1
	2 Collect and display a leaf notebook containing the native trees of Georgia. 5.2
	3 Describe the physiological processes of tree growth. 5.3
	4 Display and illustrate examples of how trees are important to the economy and environment. 5.4
Develop a logical understanding of the role of fire in a forest environment. AFNR-FS-6	1 Differentiate between desirable and undesirable fires and prepare a report on the role fire plays in a healthy forest. 6.1
	2 Explain techniques used to suppress wildfires and manage prescribed fire. 6.2
	3 Demonstrate the application of fire suppression and fire safety techniques. 6.3
	4 Formulate how air movement, topography, and fuel affect fire behavior. 6.4
	5 Analyze, plan, and evaluate a prescribed fire. 6.5
Connect concepts to explain an understanding of forest regeneration principles and practices. AFNR-FS-7	1 Identify characteristics of a healthy forest. 7.1
	2 Identify ways in which forest stands may be improved. 7.2
	3 Formulate a timber stand improvement plan for a forest. 7.3
	4 Differentiate between natural and artificial regeneration for pine and hardwoods. 7.4
	elect the proper species, site, and spacing of trees for maximum growth and ield based on data collected from site. 7.5

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	6 Determine the optimum planting date for specific planting sites and explain how to handle and store the seedlings properly. 7.6
	7 Compare a poorly planted seedling to a properly planted seedling by recording growth data. 7.7
Summarize to be able to explain the knowledge and skills necessary to evaluate and regulate timber stand growth for various forest objectives. AFNR-FS-8	1 Identify and prescribe major silviculture practices for managing timber stand growth. 8.1
	2 Describe techniques used to harvest timber. 8.2
	3 Research Best Management Practices (BMP) for forestry and sustaining forest land. 8.3
	4 Visit a timber harvesting site that has harvested timber according to BMP and record findings. 8.4
	5 Explain techniques uses to process forest products. 8.5
Analyze standard industry forest measurement methods used for forest product inventory. AFNR-FS-9	1 Describe the value of timber inventories. 9.1
	2 Discuss the procedures for conducting timber inventories. 9.2
	3 Conduct a timber inventory according to standard industry forest measurement methods. 9.3
	4 Identify and demonstrate the use of forest measurement tools. 9.4
	5 Draw tally symbols and utilize symbols properly in forest measurement. 9.5
	6 Categorize forest products. 9.6
	7 Formulate timber volume from timber cruising techniques. 9.7
	8 Demonstrate how to use maps to identify directions and features, calculate actual distance and determine the elevations of points. 9.8
	9 Employ Global Positioning System (GPS) and Geographic Information Systems (GIS) technologies to inventory features in forest management. 9.9
Identify and explain methods of controlling undesirable and invasive forest tree species based upon prescribed forest ma ob	1 Define and identify undesirable forest species. 10.1
	2 Discuss environmental factors that influence the establishment and spread of undesirable and invasive species. 10.2
	3 Develop and implement a plan to reduce the impact of undesirable and invasive pecies on a timber site. 10.3
	xplain the types of forest herbicides and describe application methods. 10.4

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Identify and classify forest disorders and prescribe methods of control. AFNR-BFS-11

1. **Show the economic losses attributed by insects and diseases.** 11.1
2. **Identify and explain the major insects and diseases of Georgia forests.** 11.2
3. **Describe which stages of insect and disease development affect forests the most.** 11.3
4. **Draw a conclusion on what causes an outbreak of a particular disease or insect in a timber stand.** 11.4
5. **Identify common forest insects and diseases and describe their life cycles and control.** 11.5