



## General Assessment Information

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**Test Type:** The Forest Products and Processing industry-based credential is included in NOCTI’s Job Ready assessment battery. Job Ready assessments measure technical skills at the occupational level and include items which gauge factual and theoretical knowledge. Job Ready assessments typically offer both a written and performance component and can be used at the secondary and post-secondary levels. Job Ready assessments can be delivered in an online or paper/pencil format.

**Revision Team:** The assessment content is based on input from secondary, post-secondary, and business/industry representatives from the states of Michigan, Nevada, and New York.



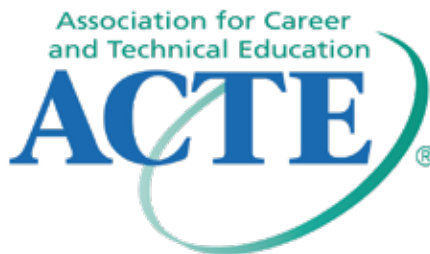
03.0511- Forestry Technology/  
Technician



Career Cluster 1- Agriculture, Food,  
and Natural Resources



45-4011.00- Forest and  
Conservation Workers



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!



In the lower division baccalaureate/associate degree category, 3 semester hours in Forestry Operations and Maintenance

## Written Assessment

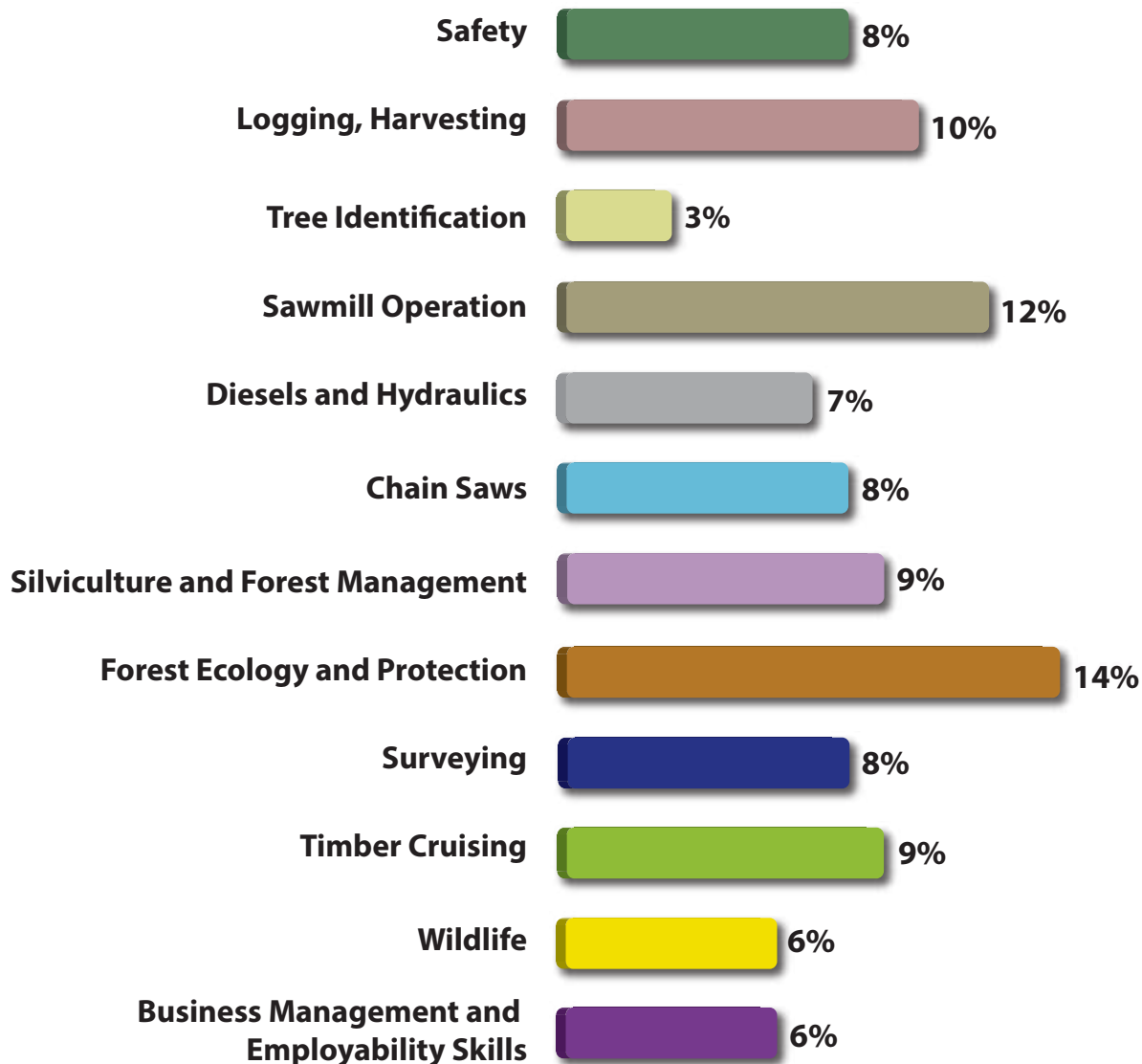
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 189

**Number of Sessions:** This assessment may be administered in one, two, or three sessions.

### Areas Covered



## Specific Standards and Competencies Included in this Assessment

### **Safety**

- Apply knowledge of personal safety practices, including use of PPEs
- Evaluate geographic and environmental factors related to safety
- Demonstrate safe use of forestry equipment and machinery including appropriate hand signals
- Select correct fire extinguisher for fire type and demonstrate proper use
- Explain the significance of OSHA as it relates to forestry

### **Logging, Harvesting**

- Define harvesting terminology
- Inspect and study harvest area
- Describe correct procedures for operating skidders and loaders, including proper choker setter's technique and dislodging snags
- Identify the parts of a choker
- Demonstrate proper techniques for manually felling a tree
- Determine legal load weight for over-the-road vehicles, including calculating cord volume and securing product for transport

### **Tree Identification**

- Identify tree types using leaves, bark, and buds
- Identify species representative to geographic area

### **Sawmill Operation**

- Explain sawmill procedures, processes, and terms
- Identify various types of saws and their uses
- Scale logs, identify log scale, and explain relationship of log volume to lumber volume
- Identify wood according to species
- Size and dimension rough-cut lumber and grade dimensional lumber
- Identify lumber defects, causes, and effects
- Explain methods of drying lumber

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## Specific Standards and Competencies (continued)

### **Diesels and Hydraulics**

- Identify the parts and functions of a hydraulic system
- Inspect, service, and troubleshoot hydraulic systems, including procedures for checking hydraulic leaks
- Identify engine, hydraulic, and gear oils
- Explain basic diesel engine operation, including fuel types, and troubleshooting

### **Chain Saws**

- Identify parts of a chain saw
- Demonstrate safe transportation, use, and operation of chain saws
- Identify types of chains and explain uses
- Adjust, sharpen, and identify features of a chain saw
- Diagnose and troubleshoot chain saw problems

### **Silviculture and Forest Management**

- Define silviculture and forest management terms
- Describe the various types of forests and their potential uses
- Identify methods of timber harvesting based on forest type
- Explain stand density and stocking
- Estimate cutting ratio to determine and achieve sustained yield

### **Forest Ecology and Protection**

- Identify environmental factors important to a forest community
- Determine tree maturity (biological and economical)
- Identify leaf diseases and their causes
- Explain how plant genetics alters tree performance
- Describe formation of forest soils
- Identify insects detrimental to forests
- Specify integrated pest management strategies
- Explain causes of deformed trees
- Identify firefighting tools and explain principles of forest fire management

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## Specific Standards and Competencies (continued)

### Surveying

- Define surveying terminology
- Use maps, GPS, and GIS to locate boundaries and topographical information
- Identify methods of calculating elevation and slope
- Identify and use measuring devices
- Calculate acreage using common forest/surveying measuring techniques

### Timber Cruising

- Select and use correct timber measuring tools
- Define common forest measurement units
- Calculate basal area
- Determine board feet
- Apply techniques of timber cruising to determine stand volume
- Apply techniques of log scaling to determine log volume

### Wildlife

- Identify types of wildlife commonly found in forest habitats
- Explain animal and human interaction and the impact on forest habitats
- Identify seasonal food sources
- Determine population density based on scientific data

### Business Management and Employability Skills

- Define business terms used to successfully operate a forest enterprise
- Explain characteristics of different types of business ownership
- Identify strategies, practices, and issues involved in successful forest enterprises



## Sample Questions

**Trees that produce cones are called**

- A. broadleaf
- B. deciduous
- C. conifers
- D. hardwoods

**After processing, hardwood lumber should be**

- A. stickered
- B. bundled
- C. covered
- D. waxed

**To safely start a chain saw, the saw should be**

- A. on the ground
- B. on the tailgate of the truck
- C. drop-started
- D. on the log

**The demand by forest trees for more growing space is called**

- A. survival
- B. variation
- C. diversity
- D. competition

**In forestry, a common unit of linear measurement is the chain which is equal to**

- A. 33 feet
- B. 66 feet
- C. 100 feet
- D. 120 feet

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### Sample Questions (continued)

**The wood from which tree is very durable when used in wet conditions?**

- A. red oak
- B. poplar
- C. white pine
- D. white cedar

**Anti-kickback devices on a chain saw will**

- A. increase the logger's time in felling trees
- B. minimize risk of injury and possible death
- C. make the logger more efficient on the job
- D. make the logger less efficient on the job

**Harvesting stands of poplar, pine, and spruce less than 8 inches in diameter is commonly called**

- A. pulp wood harvest
- B. veneer harvest
- C. saw timber
- D. mature stand harvest

**Insects that directly destroy wood are**

- A. wood borers
- B. bark borers
- C. leaf eaters
- D. root feeders

**Northern forest lands are native habitats for ruffed grouse, black bear, and**

- A. moose
- B. ring-necked pheasants
- C. armadillos
- D. long-horned antelope



## Performance Assessment

NOCTI performance assessments allow individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

**Administration Time:** 2 hours and 50 minutes

**Number of Jobs:** 7

### Areas Covered:

**15% Manually Fell a Tree**

Participants will prepare the site, and follow felling and safety procedures.

**11% Identify Leaf, Bud, and Bark Specimens**

Participants will correctly identify leaf, bud, and bark specimens.

**11% Grade Hardwood or Pine Lumber**

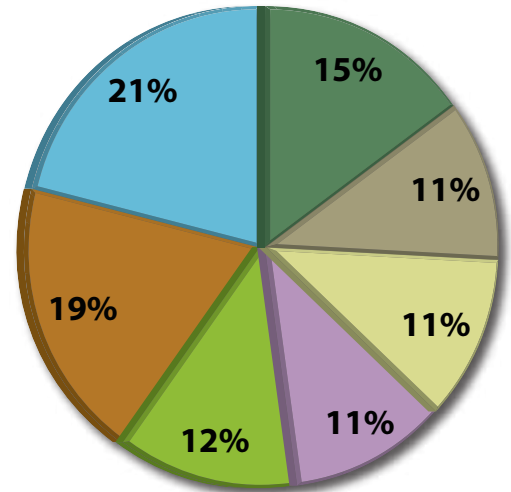
Participants will correctly identify and grade boards.

**11% Scale Hardwood or Pine Logs**

Participants will correctly identify logs and calculate volume of logs.

**12% Sharpen and Adjust Chain Saw**

Participants will safely sharpen and adjust a chain saw.



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### Areas Covered (continued)

#### **19% Calculate Acreage**

Participants will locate bearings, pace the perimeter, plot and compute acreage.

#### **21% Plot and Analyze 1/5 Acre**

Participants will calculate the number of sawlogs, convert into board feet, identify trees and correctly record volume by species.

## Sample Job

### Identify Leaf, Bud, and Bark Specimens

**Maximum Time:** 20 minutes

**Participant Activity:** The participant will identify the common names of 30 leaf, bud and/or bark specimens.

