



## FORESTRY SPECIALIST STUDY GUIDE

The Forestry Specialist Certification Exam encompasses the study of the management, protection, enhancement and improvement of soil, water, wildlife, forests and air as natural resources. Individuals earning this certification will have demonstrated competence in the application of principles and techniques for the development, application and management of forests in agricultural settings.

The certification standards for the Forestry Specialist Certification Exam include the standards and benchmarks identified by relative industry partners. Each standard is weighted based on industry needs and feedback and are noted below. The number of questions per standard is determined by the industry weight.

Standard	Description	Resource	Weight
11	Describe the forestry and natural resources industry	Introduction to Forestry Science, 3rd Edition: Chapter 1	3%
12	Practice forestry and natural resources safety	Introduction to Forestry Science, 3rd Edition: Chapter 3	4%
13	Operate, maintain, and repair machinery, equipment, and facilities	Agricultural Mechanics, 6th Edition: Section 10, Units 30, 31	3%
14	Monitor water resources	Introduction to Forestry Science, 3rd Edition: Chapter 9	3%
15	Collect and test soil samples	Introduction to Forestry Science, 3rd Edition: Chapter 9 Agriscience Fundamentals & Applications, 5th Edition: Unit 9	4%
16	Apply multi-use principles to forests and other lands	Introduction to Forestry Science, 3rd Edition: Chapter 10	2%
17	Perform basic surveying operations and map reading operations	Forests and Forestry, 5th Edition: Chapter 4	5%
18	Read and interpret aerial photographs and maps	Introduction to Forestry Science, 3rd Edition: Chapter 5; Forests and Forestry, 5th Edition: Chapter 4	4%
19	Analyze and interpret soil survey data	Introduction to Forestry Science, 3rd Edition: Chapter 5; Forests and Forestry, 5th Edition: Chapter 4	3%
20	Perform basic nursery operation activities	Introduction to Forestry Science, 3rd Edition: Chapter 13, 16	3%
21	Apply basic financial management skills	Agriscience Fundamentals & Applications, 5th Edition: Unit 36	1%
22	Demonstrate leadership and employability skills	Leadership: Personal Development and Career Success, 3rd Edition: Chapter 22	2%
23	Monitor air quality	Introduction to Forestry Science, 3rd Edition: Chapter 17; Forests and Forestry, 5th Edition: Chapter 14	3%
24	Describe timber marketing procedures and techniques	Introduction to Forestry Science, 3rd Edition: Chapter 5; Forests and Forestry, 5th Edition: Chapter 4, 11	14%
25	Perform preventive maintenance, checks, and services for forestry equipment	Storage of Farm Equipment - FM-25 (article); CNC 622 Maintenance (article); Construction Machinery (article); Preparing equipment for winter storage (article); Equipment Storage (article)	1%
26	Apply forestry and natural resources safety	Florida Right Has a Right to Know Executive Order 11-71 (pdf); Agricultural Mechanics Fundamentals & Applications, 6th Edition: Unit 4 & Unit 5; Agriscience Fundamentals & Applications, 5th Edition: Unit 14 & Unit 32	1%
27	Operate, maintain, and repair machinery, equipment, and facilities according to forestry industry standards	Clearing Clutter is First Step to Safe Farm Shop (article); Construction Machinery (article); Equipment Maintenance (article); Equipment Storage (article)	1%
28	Identify the major ecosystems in Florida	Introduction to Forestry Science, 3rd Edition: Chapter 9; Florida Ecosystems (Website/pdf);	5%
29	Perform monitoring of water resources	Introduction to Forestry Science, 3rd Edition: Chapter 9	3%
30	Assist in controlling and using fire in forests and other lands	Introduction to Forestry Science, 3rd Edition: Chapter 7	6%
31	Assist in managing forest pests	Introduction to Forestry Science, 3rd Edition: Chapter 18	5%
32	Identify applicable local, state, and federal rules and regulations and assistance programs	Introduction to Forestry Science, 3rd Edition: Chapter 6; IFAS Extension-BMPs; Silviculture Best Management Practices (article); Rules Affecting Wildlife Management (article)	1%
33	Apply multi-use principles to forest and other lands	Introduction to Forestry Science, 3rd Edition: Chapter 10	3%
34	Use aerial photographs and maps	Introduction to Forestry Science, 3rd Edition: Chapter 5; Forests and Forestry, 5th Edition: Chapter 4	2%
35	Collect and test water samples	Introduction to Forestry Science, 3rd Edition: Chapter 9; How to collect a pond/lake water sample (article)	3%
36	Interpret soil survey data	Forests and Forestry, 5th Edition: Chapter 6	2%

<b>37</b>	Apply the principles of Best Management Practices (BMP)	Introduction to Forestry Science, 3rd Edition: Chapter 6; IFAS Extension-BMPs; Silviculture Best Management Practices	<b>3%</b>
<b>38</b>	Identify technological advances in the industry	Introduction to Forestry Science, 3rd Edition: Chapter 15	<b>4%</b>
<b>39</b>	Identify wildlife population management practices	Introduction to Forestry Science, 3rd Edition: Chapter 8; Florida Forest Stewardship (article); Managed Wildlife Species (article)	<b>3%</b>
<b>40</b>	Identify multi-use principles for forest and other lands	Selecting a lease type (article); Essential Terms for a Lease Agreement (article)	<b>1%</b>
<b>41</b>	Apply basic financial management skills	Calculate Interest Rates - wikiHow (article); Tax Forms-IRS (article)	<b>1%</b>
<b>42</b>	Demonstrate leadership and management skills	How to Manage Time (article); Employee Evaluation (article)	<b>1%</b>

## FORESTRY AND NATURAL RESOURCES 2

### STANDARD 11

### 3 QUESTIONS

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Students should be familiar with the forestry and natural resources industry, including:

- Career opportunities in forestry and natural resources
- Importance of forestry and natural resources
- Professional and interest organizations and trade journals in the forestry and natural resources industries

*Sample Question: What career option best describes a person who specializes in the branch of biology that deals with forest insects?*

Students should be able to describe the importance of forestry and natural resources.

*Sample Question: What are the primary uses of harvested timber? What percentage of the world's land area is devoted to forestry?*

### STANDARD 12

### 4 QUESTIONS

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Students should identify safe practices in the forestry and natural resources industry.

*Sample Questions: When felling a tree, what type of cut should the saw operator make first? What is the class of fire extinguishers designed to put out fires composed of "ordinary combustible" materials, like paper, cardboard, and wood?*

### STANDARD 13

### 3 QUESTIONS

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Students should be able to operate, maintain, and repair machinery, equipment, and facilities. This includes:

- Servicing and maintaining small gasoline engines
- Using lab instruments

*Sample Questions: What tool is used to set the gap on a sparkplug? What is the function of a piston oil ring?*

### STANDARD 14

### 3 QUESTIONS

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Students should be familiar with monitoring water resources.

*Sample Questions: What is the most common source of agricultural water pollution? What is a watershed?*

**STANDARD 15****4 QUESTIONS**

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Students should be able to collect and test soil samples, and recommend soil additives to correct the pH level.

*Sample Question: If a soil test reveals the pH is too low, what chemical can be added to raise its pH level?*

Students should be able to identify important physical and chemical properties of soil.

*Sample question: What are the three soil horizons?*

Students should be able to determine land classes according to soil classification standards.

*Sample questions: What is the best use of a Class VII land?*

**STANDARD 16****2 QUESTIONS**

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Students should be able to apply multi-use principals to forests.

*Sample Question: What management practice is associated with public-owned forest lands being leased to private land owners for grazing?*

Students should be able to identify the types of land ownership.

*Sample Question: How are lands owned by corporations legally classified?*

**STANDARD 17****5 QUESTIONS**

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Students should be able to perform basic surveying operations.

*Sample Questions: In surveying, what term is associated with a known elevation of an area? What is the term used to describe a line's direction in relation to the point of a compass?*

**STANDARD 18****4 QUESTIONS**

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Students should be able to read and interpret aerial photographs and maps.

*Sample Questions: Forests are usually represented in what color on a map? What does it mean when a map is said to be "proportional"?*

**STANDARD 19****3 QUESTIONS**

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Student should be able to analyze and interpret soil survey data, identifying information about soil type characteristic.

*Sample questions: A soil survey will provide what type of information? If a map measures 8 inches x 4 inches with a scale of one inch = 100 feet, what size plot of land does the map represent?*

**STANDARD 20****3 QUESTIONS**

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Students should be able to perform basic nursery operation activities, including:

- Plant propagation
- Pruning, trimming, and fertilizing
- Maintaining plants

*Sample Questions: What is the most common way to propagate a plant? What is the major advantage of pruning trees to be used for lumber? Why are Christmas trees pruned?*

**STANDARD 21****1 QUESTION**

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Students should be able to apply basic financial management skills.

*Example Question: Loans that are made for periods of 1-7 years, and used to purchase such things as livestock or tractors, are classified as what type of loans?*

**STANDARD 22****2 QUESTIONS**

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Students should be able to demonstrate leadership and employability skills.

*Example Questions: Where should personal information, such as contact information, be placed when preparing a resume? What are examples of things that should not be done at the conclusion of an interview?*

**STANDARD 23****3 QUESTIONS**

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Students should be able to monitor air quality. This includes:

- Identifying physical and chemical properties of air
- Identifying present and potential sources of air pollution

*Example Questions: Which element is found in air in the largest quantity? Aside from the pollution caused by man, what is the leading natural source of pollution?*

**STANDARD 24****14 QUESTIONS**

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Describe timber marketing procedures and techniques, including:

- Identifying products made from trees and other natural resources and their value
- Conducting a timber cruise
- Identifying components of timber sales contracts
- Identifying methods of harvesting and erosion prevention
- Measure trees and determine forest volume
- Identify and use tree measuring tools and instruments, such as dendrometers, hypsometers, increment borers, prisms, volume tables, and logger's tape

*Example Questions: What is timber cruising? What would be the sales length of a log is cut at a 13'4" length? What points would you expect to find in a timber sales contract? What term describes a piece of wood that is greater than 5" x 5" in dimensions? At what height would the basal area of a tree be measured? When a tree's diameter must be measured from a distance, what tool could be selected to make this measurement? How many board feet are in a board that measures 2"x8"x12'?*

**STANDARD 25****1 QUESTION**

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Students should be able to perform preventive maintenance, checks, and services for forestry equipment, including:

- Daily maintenance checks
- Preventive maintenance
- Troubleshooting

*Example Questions: On a regular maintenance schedule, how often should the radiator water level be checked? What type of engine requires the highest viscosity oil? When air gets into a working hydraulic cylinder, what should be done?*

## FORESTRY AND NATURAL RESOURCES 3

### STANDARD 26

### 1 QUESTION

Students should be able to apply forestry and natural resources safety by complying with Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) safety rules and regulations.

*Example Questions: What are examples of safety clothing requirements of the Occupational Safety and Health Administration (OSHA) pertaining to the operator of a chainsaw? What governmental agency is responsible for administering rules that govern the pollution of an area caused by the cutting timber to close to a stream?*

Students should be able to describe Florida's "Right-to-Know" law (as recorded in the Florida Statutes, Chapter 442).

*Example Question: What is the purpose of the Florida Right to Know Law?*

### STANDARD 27

### 1 QUESTION

Students should be able to operate, maintain, and repair machinery, equipment, and facilities according to forestry industry standards.

*Example Questions: How often should an oil check be completed on a piece of equipment used in the timber industry? In terms of safety, what is the first step in maintaining a shop facility?*

### STANDARD 28

### 5 QUESTIONS

Students should be able to identify the major ecosystems in Florida. This includes:

- Habitats of endangered species
- Common plant and animal species of major ecosystems
- Environmental factors affecting ecosystems in Florida

*Example Questions: What type of ecosystem contains only one type of plant, such as an orange grove? The natural process by which water moves in a circular flow from oceans to land and back to the oceans is known as what type of cycle? In what type of ecosystems would fish be found? What poses the greatest threat to Florida's ecological systems?*

**STANDARD 29****3 QUESTIONS**

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Students should be able to monitor water resources.

*Example Question: Which element is closely involved with acid rain?*

Students should be able to identify and monitor erosion hazards and environmental quality.

*Example Question: When harvesting timber, what is an effective way to control erosion?*

**STANDARD 30****6 QUESTIONS**

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Students should be able to assist in controlling and using fire in forests and other lands, including:

- Identifying the major causes of wildfire
- Determining fire danger in forests and other lands
- Describing personal safety procedures for wildland fire fighters
- Identifying and describe the use of basic tools for wildland firefighting
- Explaining the uses of prescribed burning in forestry, natural resources, and wildlife management.
- Identifying the different types of burning assistance that are available through agencies or vendors.

*Example Questions: What is the greatest single natural cause of forest fires? What is the first priority in any fire suppression effort in the United States? What type of fire is intentionally set by firefighters to burn the fuel from the path of a large uncontrolled fire? What is the most important asset that firefighters possess? What is the primary purpose of chemicals dropped from aircraft onto a burning fire?*

**STANDARD 31****5 QUESTIONS**

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Students should be able to assist in managing forest pests by the following:

- Identifying common forest pests, insects, and diseases
- Managing chemical, mechanical, and other controls of undesirable species

*Example Questions: What are common host plants in the life cycle of "rusts"? Webworms and caterpillars belong to which type of insects? What are examples of mechanical controls of pests? What problems do deer pose to forests?*

**STANDARD 32****1 QUESTION**

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Students should be able to identify applicable local, state, and federal rules and regulations and assistance programs.

*Example Questions: What is the purpose of an Environmental Impact Statement? Public forest lands are administered under the jurisdiction of what governmental agencies? What agency is responsible for managing public lands designated as national forests and wilderness?*



**STANDARD 33****3 QUESTIONS**

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Students should be able to apply multi-use principles to forests and other lands.

*Example Questions: What management practice allows different resources within an area to be used at the same time? What is the difference in "renting" forest land and "leasing" forest land?*

**STANDARD 34****2 QUESTIONS**

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Students should be able to use maps and aerial photographs for determine acreage and to identify major timber types and land features.

*Example Questions: What is photogrammetry? Survey lines that run north to south are referred to as what?*

**STANDARD 35****3 QUESTIONS**

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Students should be able to collect and test water samples.

*Example Questions: What is a "watershed"? When collecting a water sample to measure the water quality in a lake where water enters from a stream and exits into a stream, where should the sample be taken? How does an aquifer differ from a lake?*

**STANDARD 36****2 QUESTIONS**

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Students should be able to interpret soil survey data by applying soil survey information to silvicultural practices and environmental management.

*Example Questions: If an aerial photograph shows a new area of disease infested, dead or dying trees, what silviculture practice should the landowner implement to maximize profits? For what purpose is prescription burning most likely to be used?*

**STANDARD 37****3 QUESTIONS**

Students should be able to apply the principles of Best Management Practices (BMP) as evidenced by their knowledge of:

- Terms that relate to BMP
- Soil erosion and slope coefficients
- Land use strategies that follow BMP guidelines

*Example Questions: What is meant by the term Best Management Practices? What four major areas of management are covered by BMPs? What is a Special Management Zone in a silviculture BMP? In a Best Management Practice in which Florida soils are classified as A, B, or C, what does a "B" classification mean? What rules govern the clearcutting of timber from a BMP primary zone?*

**STANDARD 38****4 QUESTIONS**

Students should be able to identify technological advances in the forestry industry in regards to:

- Satellite surveying operations
- Laser systems
- Satellite thermal infrared imagery
- Computer mapping systems
- Geographic information systems
- Electronic communication devices
- Computer operations

*Example Questions: What system allows for the exact location of forest fire fighters? What technology is used to map soil and forest types? What is photogrammetry? What does a computer network accomplish in terms of a communication system? What does the computer program BEHAVE do?*

**STANDARD 39****3 QUESTIONS**

Students should be able to identify wildlife population management practices, including the identification and classification of Florida wildlife species.

*Example Question: In terms of wildlife management, what is mast? What are examples of animals on the endangered species list?*

**STANDARD 40****1 QUESTION**

Students should be able to identify multi-use principles for forest and other lands as they pertain to different types of leases.

*Example Questions: What are the necessary components of a lease agreement for timber cutting purposes? What is the difference between a fixed-cash and crop-share lease?*

**STANDARD 41****1 QUESTION**

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Students should be able to apply basic financial management skills that pertain to loan interest and tax form completion.

*Example Questions: On a \$10,000 loan, how much yearly interest would a person pay if the annual percentage rate (APR) was set at 5%? On what tax form would deductions for a farm operation be listed?*

**STANDARD 42****1 QUESTION**

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Students should be able to demonstrate leadership and management skills.

*Example Questions: To effectively manage time, how should each work day begin? During an employee evaluation, what are common acceptable actions that the employee may take?*