


2017 Career Development Event Rules and Regulations

*Forestry*

		
Maximum Number of Team Members	4	
Number of Team Members Scored	4	
Scantron	Forestry – Form Number – 239564-	
<b>Committee:</b> Leon Ammons Scott Garber Donald Poage Jason Miihlbach John Workman		

All participants in the Forestry CDE must wear a hard hat at all times. Participants may use “simple” calculators.

**Contest Format:**

**Phase 1: General Knowledge/Management (100 points).**

Fifty (50) objective-type multiple choice or true/false questions will be selected from the areas of the forest industry and forest management. This phase of the contest will test the contestant’s knowledge and understanding of basic principles of forestry.

Time: Each contestant will be allowed 30 minutes to complete this phase of the contest.

Scoring: Each answer has a value of 2 points for a total maximum score of 100 points.

**Phase 2: Tree Identification (90 points)**

Fifteen (15) specimens from the following list will be numbered for contestants to identify by common names. Numbered specimens can be live trees or live branches.

Time: Each contestant will be allowed 30 minutes to complete this phase of the contest.

Scoring: Six points will be given for each specimen that is correctly identified for a maximum of 90 points.

- |   |   |
|---|---|
| Alder, Red (Alnus rubra)                | Birch, Black (Betula lenta)             |
| Ash (Fraxinus sp.)                      | Birch, White (Betula papyrifera)        |
| Aspen, Bigtooth (Populus grandidentata) | Cherry, Black (Prunus serotina)         |
| Aspen, Quaking (Populus tremuloides)    | Cottonwood, Eastern (Populus deltoides) |
| Baldcypress (Taxodium distichum)        | Elm (Ulmus sp.)                         |
| Beech, American (Fagus americana)       | Fir, Balsam (Abies balsamea)            |

## 2017 Career Development Event Rules and Regulations

Fir, Douglas ( <i>Pseudotsuga menziesii</i> )	Pine, Lodgepole ( <i>Pinus contorta</i> )
Hemlock, Eastern ( <i>Tsuga canadensis</i> )	Pine, Longleaf ( <i>Pinus palustris</i> )
Hemlock, Western ( <i>Tsuga heterophylla</i> )	Pine, Pitch ( <i>Pinus rigida</i> )
Hickory ( <i>Carya sp.</i> )	Pine, Ponderosa ( <i>Pinus ponderosa</i> )
Maple, Red ( <i>Acer rubrum</i> )	Pine, Red ( <i>Pinus resinosa</i> )
Maple, Sugar ( <i>Acer saccharum</i> )	Pine, Shortleaf ( <i>Pinus echinata</i> )
Oak, Black ( <i>Quercus velutina</i> )	Poplar, Yellow ( <i>Liriodendron tulipifera</i> )
Oak, Chestnut ( <i>Quercus Montana</i> )	Red Cedar, Western ( <i>Thuja plicata</i> )
Oak, Northern Red ( <i>Quercus rubra</i> )	Redcedar, Eastern ( <i>Juniperus virginiana</i> )
Oak, Scarlet ( <i>Quercus coccinea</i> )	Spruce, Red ( <i>Picea rubens</i> )
Oak, Southern Red ( <i>Quercus falcata</i> )	Spruce, Sitka ( <i>Picea sitchensis</i> )
Oak, White ( <i>Quercus alba</i> )	Spruce, White ( <i>Picea glauca</i> )
Pecan ( <i>Carya illinoensis</i> )	Sweetgum ( <i>Liquidambar styraciflua</i> )
Pine, Eastern White ( <i>Pinus strobus</i> )	Sycamore ( <i>Platanus sp.</i> )
Pine, Loblolly ( <i>Pinus taeda</i> )	Walnut, Black ( <i>Juglans nigra</i> )

### Phase 3: Equipment Identification (60 points)

Twenty (20) pieces of equipment from the following list will be displayed for the contestants to identify by technical names. Each piece of equipment will be designated by a number.

Time: Each contestant will be allowed 30 minutes to complete this phase.

Scoring: Three (3) points will be given for each piece of equipment identified correctly for a total of 60 points. No partial credit will be given.

Altimeter	Endloader	Log Rule
Angle gauge	Feller Buncher	Logger's Tape
Ascender	Felling Wedge	Maul
Automatic Level	Fiberglass Measuring	Peavy
Back-pack Fire Pump	Tape	pH Meter
Bark Gauge	Fire Rake	Planimeter
Bulldozer	Fire shelter	Plant Press
Canthook	Fire Weather Kit	Plastic Flagging
Carabiner	Fire-Swatter	Pole saw
Chainsaw	First aid kit	Pruning Saw
Chainsaw Chaps	Flow/current Meter	Pulaski Axe
Clinometer	GPS Receiver	Relaskop
Combination tool	Hand Compass	Safety Glasses
Data Recorder	Hand Lens/Field	Safety Hard Hat
Densimeter	Microscope	Scale Stick
Diameter Tape	Hip Chain	Secchi Disc
Dot Grid	Hypo-Hatchet	Soil Sampler
Drip Torch	Increment Borer	Soil Test Kit
Ear Protection	Jacob Staff	Staff Compass

## 2017 Career Development Event Rules and Regulations

Stereoscope  
Tally Book  
Tally Meter  
Timber Tongs  
Tree Caliper

Tree Harvester  
Tree Marking Gun  
Tree Planting Hoe or  
Bar  
Tree Skidder

Water Sampler  
Water Test Kit  
Wedge Prism

### Phase 4: Forestry Applications (300 points)

The event superintendent will designate **three** practicums to be completed by the participant (individually) from the following list. The specific practicums for the year will be announced on or before September 1. Each practicum has a score of 100 points and a time period of 30 minutes.

**1. Sawtimber Cruising:** Each contestant will use the Biltmore Tree Stick to measure the DBH and merchantable height in 8-foot half-logs or 16-foot logs for ten (10) designated sawtimber trees. Using the provided volume table the contestant will calculate the total volume of the 10 trees.

#### *Diameter measurement criteria:*

- Diameter breast height (DBH) must be 11.0 inches or greater.
- Record all trees in 1-inch diameter classes.

**Note:** Any tree diameter measured at the exact half-inch point will become the next highest full inch. For example, 11.5 becomes 12 inches, 13.5 becomes 14 inches, etc.

#### *Height measurement criteria:*

- Merchantable sawtimber height is measured from a 1-foot stump to a 10-inch top diameter (inside bark).
- Hollow trees or curved trunks (sweep) are not considered as a defect for this contest. Measure to the nearest half-log by interpolating between the full log markings on the tree stick.

Time: 30 minutes

Scoring: 100 points

Three points will be given for the correct DBH and three points for the correct height. Forty (40) points will be given for the correct volume per acre. Five points will be deducted for each five percent plus or minus from the correct measured volume.

## 2017 Career Development Event Rules and Regulations

**2. Pulpwood Cruising:** Each contestant will use the Biltmore Tree Stick to measure the DBH and merchantable height in 8-foot bolts of ten (10) designated pulpwood-sized trees and calculate the standard cord volume of the 10 trees.

Contestants will calculate the volume using the volume table provided by the contest coordinator.

*Diameter measurement criteria:*

- Diameter breast height (DBH) must be five (5) inches or greater.
- Tally all trees in 1-inch classes.

**Note:** Any tree measured at the exact half-inch point will become the next highest full inch

(See sawtimber above).

*Height measurement criteria:*

- Merchantable pulpwood height is measured from a 1-foot stump to a 4-inch top diameter (inside bark).
- Measure to the nearest 8-foot bolt (stick) by interpolating between the 16-foot “log” markings on your tree stick.

Time: 30 minutes

Scoring: See sawtimber scoring above.

**3. Compass and Pacing:** The contestant will use a hand compass and pacing to the nearest **full foot** to simulate determination of the property lines on a timber tract or locating timber cruise transect lines. The compass course will consist of five (5) separate lines. The participant can start at any of the 5 starting points and will record the **azimuth** bearing (to the **nearest full degree**). Participants can bring their own compass or use Silva Ranger type compasses provided by the contest coordinator. Hand held compasses with sighting devices cannot be used. Participants will also pace each of the 5 lines and convert their paces to feet that indicates the length of each line.

Time: 30 minutes

Scoring: 100 points (20 maximum points/line – 10 per bearing & 10 per distance)

- Deduction of 1 point/2 degrees of bearing or 2 feet of distance from the correct answer.
- Maximum of 20 points will be deducted on any line.

**Note:** A laminated sheet of conversions of quadrant readings to azimuth readings will be available at each of the 5 starting points.

#### **4. Forest Management Evaluation - Timber Stand Improvements (TSI) and/or Thinning**

A. The trees selected and designated for use in this part of the event may be all of one species or a mixture of species.

B. An area will be selected and identified by ribbons, paint, rope, etc. It will contain at least 15, and not more than 30 marked trees within a timber stand that needs thinning or some TSI work. All trees in the selected area will be considered as a forest management site, and the participants using one of the following options will score each marked tree:

- a. Harvest (utilize the tree)
- b. Leave - (the tree should remain in stand for a good reason)
- c. Deaden - (Undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down and left in woods)

C. The participants will be given a “situation” concerning the forest management objectives of the stand selected. Information that will be needed to help participants in their decisions will include:

- a. Markets available - (including hardwood)
- b. Wildlife habitat considerations - (scope, etc.)
- c. Present condition of stand
- d. Final goal of the management plan

This information will be given to participants at the site before they start evaluation of the stand either orally, by poster or a “handout” sheet.

D. Time: Participants will be given 30 minutes to make their decisions.

E Scoring: Four points will be given for each correct decision up to a maximum total of 100 points, depending on the number of trees. (The possible score for this phase of the event will vary.)

#### **5. Map Interpretation**

A. Participants will be furnished a United States Geological Survey topographic map with specific points marked for the participant to identify. The participant shall know legal description, recognize topographic map symbols, understand the meaning of map symbols and size and location of 40 acres or more in a section.

## 2017 Career Development Event Rules and Regulations

B. Ten points on the map will be clearly marked with a number or arrow pointing to the section, symbol or area on the map to be identified.

C. Examples:

- a. What is the legal description of the area boxed?
- b. What is the item located at this point?
- c. What is the acreage of the area enclosed?
- d. In what section is the city of Marshall located?

D. Legal descriptions will be written or described according to the following: NW Northwest T Township SE Southeast R Range S Section (640 acres) 1/4 Quarter of a section (160 acres) 5.  
Scoring: Ten questions or problems will be completed. Ten points will awarded for each correct answer.

### **6. Chainsaw Part Identification, Troubleshooting, and Safety**

This practicum is divided into three parts:

Part 1 - Chainsaw part identification- Each participant will identify parts of a chainsaw. These parts will be labeled on a saw or will be removed from the saw.

Part 2 - Troubleshooting - The participant will identify “problems” or “troubles.” Each station will have a part, component, saw or written situation with problem areas clearly marked. The participant may pick up parts or touch the saw.

Part 3 - Safety - The participant will observe photos, actual parts, written situations and/or problems to identify the safety hazard or unsafe practice.

Scoring: A total of 100 points are possible for this section.

### **7. Tree/Forest Disorders**

A. Symptoms of at least ten (10) and not more than twenty (20) disorders from the following list will be displayed for participants to identify by common names. The symptoms will be presented in one or more of the following forms:

- a. Actual sample
- b. Picture(s)/Slides
- c. Written description

## 2017 Career Development Event Rules and Regulations

### d. Written case history

A number will designate each set of symptoms representing a disorder.

B. Scoring: Five points will be given for each disorder that is correctly identified for a total of up to 100 points, depending on the number of disorders. (The possible score for this practicum will vary).

Aphid	Ipps Engraver Beetle
Asian Longhorn Beetle	Landscape equipment damage
Butt or Heart Rot	Lightning damage
Canker	Mechanical damage
Chemical damage	Mistletoe
Cicada	Mountain Pine Beetle
Climatic injury: snow, wind, frost, drought, hail	Nematode
Damping off	Rust
Douglas fir tussock moth	Sawfly
Emerald ash borer	Scale
Fir Engraver Beetle	Spruce budworm
Fire damage	Sunscald
Gypsy moth	Tent caterpillar
Hemlock woolly adelgid	Wetwood or slime flux
	Wildlife/Livestock damage

## 8. Forest Products Practicum

A. Ten to twenty wood products/samples will be displayed for participants to evaluate and identify its tree species source from the approved tree specimen list. The wood products/samples will be presented in one or more of the following forms:

- a. Actual Sample
- b. Picture(s)/Slides
- c. Written description

A number will designate each sample representing a species.

B. Scoring: This will be a multiple choice practicum. Five points will be given for each wood product or sample that is correctly identified for a total of up to 100 points, depending on the number of products/samples. (The possible score for this practicum will vary).

## 9. Forest Business Management Problem

## 2017 Career Development Event Rules and Regulations

A. This section is designed to determine the participant's ability to apply economic principles and concepts of management to the decision making process by actual problem analysis and to defend the decisions made. This will involve a model forest operation with possible calculation on profit/loss, cost of operation, taxes, depreciation, marketing product, stumpage cost, record keeping, etc. The exact problem may or may not be in a listed reference. A maximum of ten problems or questions will be used.



## 2017 Career Development Event Rules and Regulations

### Tree Identification Specimen List

- |   |  |
|---|--|
| 101. Alder, Red ( <i>Alnus rubra</i> )                | 122. Oak, Scarlet ( <i>Quercus coccinea</i> )          |
| 102. Ash ( <i>Fraxinus</i> sp.)                       | 123. Oak, Southern Red ( <i>Quercus falcata</i> )      |
| 103. Aspen, Bigtooth ( <i>Populus grandidentata</i> ) | 124. Oak, White ( <i>Quercus alba</i> )                |
| 104. Aspen, Quaking ( <i>Populus tremuloides</i> )    | 125. Pecan ( <i>Carya illinoensis</i> )                |
| 105. Baldcypress ( <i>Taxodium distichum</i> )        | 126. Pine, Eastern White ( <i>Pinus strobus</i> )      |
| 106. Beech, American ( <i>Fagus americana</i> )       | 127. Pine, Loblolly ( <i>Pinus taeda</i> )             |
| 107. Birch, Black ( <i>Betula lenta</i> )             | 128. Pine, Lodgepole ( <i>Pinus contorta</i> )         |
| 108. Birch, White ( <i>Betula papyrifera</i> )        | 129. Pine, Longleaf ( <i>Pinus palustris</i> )         |
| 109. Cherry, Black ( <i>Prunus serotina</i> )         | 130. Pine, Pitch ( <i>Pinus rigida</i> )               |
| 110. Cottonwood, Eastern ( <i>Populus deltoides</i> ) | 131. Pine, Ponderosa ( <i>Pinus ponderosa</i> )        |
| 111. Elm ( <i>Ulmus</i> sp.)                          | 132. Pine, Red ( <i>Pinus resinosa</i> )               |
| 112. Fir, Balsam ( <i>Abies balsamea</i> )            | 133. Pine, Shortleaf ( <i>Pinus echinata</i> )         |
| 113. Fir, Douglas ( <i>Pseudotsuga menziesii</i> )    | 134. Poplar, Yellow ( <i>Liriodendron tulipifera</i> ) |
| 114. Hemlock, Eastern ( <i>Tsuga canadensis</i> )     | 135. Red Cedar, Western ( <i>Thuja plicata</i> )       |
| 115. Hemlock, Western ( <i>Tsuga heterophylla</i> )   | 136. Redcedar, Eastern ( <i>Juniperus virginiana</i> ) |
| 116. Hickory ( <i>Carya</i> sp.)                      | 137. Spruce, Red ( <i>Picea rubens</i> )               |
| 117. Maple, Red ( <i>Acer rubrum</i> )                | 138. Spruce, Sitka ( <i>Picea sitchensis</i> )         |
| 118. Maple, Sugar ( <i>Acer saccharum</i> )           | 139. Spruce, White ( <i>Picea glauca</i> )             |
| 119. Oak, Black ( <i>Quercus velutina</i> )           | 140. Sweetgum ( <i>Liquidambar styraciflua</i> )       |
| 120. Oak, Chestnut ( <i>Quercus Montana</i> )         | 141. Sycamore ( <i>Platanus</i> sp.)                   |
| 121. Oak, Northern Red ( <i>Quercus rubra</i> )       | 142. Walnut, Black ( <i>Juglans nigra</i> )            |

### Equipment Identification List

- |                               |                                   |                              |
|-------------------------------|-----------------------------------|------------------------------|
| 1. Altimeter                  | 24. Fire Rake                     | 46. Pruning Saw              |
| 2. Angle gauge                | 25. Fire shelter                  | 47. Pulaski Axe              |
| 3. Ascender                   | 26. Fire Weather Kit              | 48. Relaskop                 |
| 4. Automatic Level            | 27. Fire-Swatter                  | 49. Safety Glasses           |
| 5. Back-pack Fire Pump        | 28. First aid kit                 | 50. Safety Hard Hat          |
| 6. Bark Gauge                 | 29. Flow/current Meter            | 51. Scale Stick              |
| 7. Bulldozer                  | 30. GPS Receiver                  | 52. Secchi Disc              |
| 8. Canthook                   | 31. Hand Compass                  | 53. Soil Sampler             |
| 9. Carabiner                  | 32. Hand Lens/Field<br>Microscope | 54. Soil Test Kit            |
| 10. Chainsaw                  | 33. Hip Chain                     | 55. Staff Compass            |
| 11. Chainsaw Chaps            | 34. Hypo-Hatchet                  | 56. Stereoscope              |
| 12. Clinometer                | 35. Increment Borer               | 57. Tally Book               |
| 13. Combination tool          | 36. Jacob Staff                   | 58. Tally Meter              |
| 14. Data Recorder             | 37. Log Rule                      | 59. Timber Tongs             |
| 15. Densimeter                | 38. Logger's Tape                 | 60. Tree Caliper             |
| 16. Diameter Tape             | 39. Maul                          | 61. Tree Harvester           |
| 17. Dot Grid                  | 40. Peavy                         | 62. Tree Marking Gun         |
| 18. Drip Torch                | 41. pH Meter                      | 63. Tree Planting Hoe or Bar |
| 19. Ear Protection            | 42. Planimeter                    | 64. Tree Skidder             |
| 20. Endloader                 | 43. Plant Press                   | 65. Water Sampler            |
| 21. Feller Buncher            | 44. Plastic Flagging              | 66. Water Test Kit           |
| 22. Felling Wedge             | 45. Pole saw                      | 67. Wedge Prism              |
| 23. Fiberglass Measuring Tape |                                   |                              |

## 2017 Career Development Event Rules and Regulations

### TREE DISORDERS

- |      |  |      |                            |
|------|--|------|----------------------------|
| 301. | Aphid  | 315. | Ipps Engraver Beetle       |
| 302. | Asian Longhorn Beetle                                | 316. | Landscape equipment damage |
| 303. | Butt or Heart Rot                                    | 317. | Lightning damage           |
| 304. | Canker   | 318. | Mechanical damage          |
| 305. | Chemical damage                                      | 319. | Mistletoe                  |
| 306. | Cicada   | 320. | Mountain Pine Beetle       |
| 307. | Climatic injury: snow, wind, frost, drought,<br>hail | 321. | Nematode                   |
| 308. | Damping off  | 322. | Rust                       |
| 309. | Douglas fir tussock moth                             | 323. | Sawfly                     |
| 310. | Emerald ash borer                                    | 324. | Scale                      |
| 311. | Fir Engraver Beetle                                  | 325. | Spruce budworm             |
| 312. | Fire damage  | 326. | Sunscald                   |
| 313. | Gypsy moth   | 327. | Tent caterpillar           |
| 314. | Hemlock woolly adelgid                               | 328. | Wetwood or slime flux      |
|      |  | 329. | Wildlife/Livestock damage  |