

Illinois Association of Vocational Agriculture Teachers Forestry Career Development Event

Contest Superintendent - Cherie Rogier, (crogier@mvths.org) , Mt. Vernon

IAVAT CDE Committee Member - Chris Clausen, Elverado

Host - Dr. Eric Holzmüller, SIU Forestry Associate Professor

A. General Information

1. Registration

Early bird registration will be available for this event up until 2 weeks prior to the contest. On-site registration will be available at the full rate on the day of the contest.

2. Team:

The event will include two divisions: (1) High School (2) 7th/8th grade. Five (5) team members from each school will be permitted to judge in each division. The three (3) individuals earning the highest total scores will constitute the competing team (a school may compete with three members). A school may enter less than three members, but then the member(s) will compete only as individuals.

3. Placings/Scoring:

Official ring placings will be given immediately following completion of the event.

4. Miscellaneous:

- a) Students will be allowed to touch and/or handle plant material during the event; however, they may not remove leaves or branches from the trees.
- b) Observers will not be permitted in the event area while the event is in progress. Any participant caught cheating and/or talking during the event will be disqualified.
- c) All participants are expected to be prompt at their stations throughout the event. No provision will be made for tardiness and late participants will risk losing event points.
- d) Participants will be assigned to group leaders who will escort them to various event staging sites.
- e) All participants will be given a participant number by which they will be designated throughout the event.
- f) Each participant is to stay with his or her group leader throughout the event or until told to change leaders by the event chairman.
- g) Participants should come prepared to work in adverse weather conditions; they should have raincoats and proper clothing.
- h) All written materials will be furnished for the event. Each participant should provide a clipboard and pencil; electronic calculators will be allowed.
- i) Unless prior arrangements are made with the event chairman, each participant should provide a tree scale stick (Biltmore).

5. Additional Information: Refer to the *Annual Information and General Rules* section for the current year for information concerning **Entry Fees, Registration, and Location** of the event. Scantron Card #530-3 will be used for this event.

6. Watch the *AgEd Listserve* for event details.

B. Event Format

1. General Knowledge (100 points)

Fifty objective-type multiple-choice questions, from the listed references, will be selected from areas of the forestry industry. This phase of the event will test the participant's knowledge and understanding of basic principles of forestry.

Each participant will be allowed 50 minutes to complete this phase of the event. Each answer has a value of 2 points for a maximum score of 100 points.

*"All of the above" and "None of the above" options will be eliminated from CDE exam questions.

2. Tree Identification (150 points)

Twenty-five specimens from the following list will be displayed for participants to identify by common names. Each specimen will be designated by a number. Each participant will be allowed 30 minutes to complete this phase. Six points will be given for each correctly identified specimen for a maximum of 150 points. For scantron purpose tree identification will be recorded in the equipment identification.

Tree Identification 10 to 62		
10 American Basswood	28 Hickory, Pignut	46 Pine, Eastern White
11 American Beech	29 Hickory, Shagbark	47 Pine, Jack
12 American Hophorn Beam	30 Kentucky Coffeetree	48 Pine, Pitch
13 Ash	31 Locust, Black	49 Pine, Red
14 Aspen, Quaking	32 Locust, Honey	50 Pine, Scotch
15 Baldcypress	33 Maple, Red	51 Pine, Virginia
16 Birch, Paper; Birch, White	34 Maple, Silver	52 Redbud, Eastern
17 Birch, River	35 Maple, Sugar	53 Red Cedar, Eastern
18 Black Cherry	36 Oak, Black	54 Sassafras
19 Box Elder	37 Oak, Bur	55 Spruce, Norway
20 Catalpa	38 Oak, Chinkapin	56 Sumac
21 Cottonwood, Eastern	39 Oak, Northern Red	57 Sweetgum
22 Elm	40 Oak, Pin	58 Sycamore, American Planetree
23 Flowering Dogwood	41 Oak, Post	59 Tulip-poplar
24 Hackberry	42 Oak, Shingle	60 Walnut, Black
25 Hemlock, Eastern	43 Oak, White	61 Willow, Black
26 Hickory, Bitternut	44 Pecan	
27 Hickory, Mocknut	45 Persimmon	

3. Equipment Identification (100 points)

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

Each participant will be allowed 30 minutes to complete this phase, or approximately 1½ minutes for each equipment station. Five points will be given for each piece of equipment identified correctly for a maximum of 100 points. For scantron purpose equipment identification will be in the tree identification

Equipment Identification 10 to 45		
10 Abney Level	22 GPS Receiver	34 Safety hat
11 Bark Gauge	23 Hand Compass	35 Single bitted axe
12 Chain Saw	24 Hand Lens/Field Microscope	36 Stadia Rod
13 Chaps	25 Hypsometer	37 Staff Compass
14 Diameter Tape	26 Increment Borer	38 Stereoscope
	27 Jacobs Staff	39 Surveying pins

15 Double bitted axe	28 Peavy/canhook	40 Tally Meter
16 Drip Torch	29 Planimeter	41 Tree Caliper
17 Ear Protectors	30 Plastic flagging	42 Tree injector
18 Fiberglass measuring tape	31 Pulaski forester axe	43 Tree planting hoe or bar
19 Fire Rake	32 Relaskop	44 Tree scale stick
20 Forester's Chain	33 Safety glasses	45 Wedge Prism
21 Fusee		

4. Practicums

Participants will compete individually in four practicums from the following list.

Every year - participants will compete in the “Timber Cruising for Board Volume” practicum and the “Map Reading practicum”.

Even-numbered years - participants will also compete in the “Forest Management Evaluation - Timber Stand Improvements (TSI) and/or Thinning” and “Compass Reading” practicums.

Odd-numbered years - participants will also compete in the “Chain Saw Part Identification, Troubleshooting, and Safety” and “Tree/Forest Disorders” practicums.

a. Tree Management - Timber Cruising for Board Volume (Every year)

1) Using a tree scale stick, each participant will measure ten (10) pre-numbered trees (for Diameter Breast Height and merchantable height). The participant must record the Diameter Breast Height (DBH) computed to the nearest inch, and the merchantable height of each tree, height rounded down to the nearest 8-foot log.

2) The following minimum diameters and log length will be:

Minimum Saw Timber

DBH	12 inches
Top Diameter (inside bark)	8 inches
Height	16 feet

3) Time: Participants will be allowed 30 minutes to measure height and record DBH.

4) Volume tables will be provided at the event site.

5) Scoring: Five points will be allowed for the correct DBH, 3 points will be allowed for being 1” above or below the correct DBH, 1 point will be allowed for being 2” above or below the correct DBH, and 0 points will be allowed for being more than 2” above or below the correct DBH ; 5 points for the correct height, 3 points will be allowed for being .5 log above or below correct number of logs, 1 point will be allowed for being 1 log above or below the correct number of logs, and 0 points for being more than 1 log above or below the correct number of logs. A maximum score for this practicum is 100 points.

b. Map Interpretation (Every year)

1) Participants will be furnished a U.S. Geological Survey topographic map with specific points marked for the participant to identify. The participant shall know legal descriptions, recognize topographic map symbols, understand the meaning of map symbols and size, and describe location of 40 acres or more in a section.

- 2) Ten points on the map will be clearly marked with a number or arrow pointing to a section, symbol, or area on the map to be identified.
 - 3) 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?
 - 4) Legal descriptions will be written or described according to the following:
 - NW - Northwest
 - T - Township
 - SE - Southeast
 - R - Range
 - S - Section (640 acres)
 - $\frac{1}{4}$ - Quarter of a section (160 acres) or a quarter of a quarter (40 acres of the 160)
 - 5) Time: Thirty minutes will be allowed for this phase.
 - 6) Scoring: Ten multiple choice questions will be completed. Five points will be awarded for each correct answer. The maximum possible score for this practicum is 50 points.
 - 7) Map reading answers will be recorded in the practicum 2 box on scantron.
- c. **Forest Management Evaluation - Timber Stand Improvement (TSI) and/or Thinning**
(Even-numbered years)
- 1) The ten (10) trees selected and designated for use in this part of the event may be all of one species or a mixture of species.
 - 2) A timber stand area will be selected and identified by ribbons, paint, rope, etc. The area will contain ten (10), marked trees that need thinning or some TSI work.
 - 3) 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 orally, by poster, or a *handout* sheet.
 - 4) All trees in the selected area will be considered part of a forest management site and each marked tree will be scored using one of the following options.
 - a) Harvest - utilize the tree.
 - b) Leave - the tree should remain in the stand for a good reason
 - c) Deadened - undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down and left in the woods.

- 5) Time: Participants will be given 30 minutes to make their decisions.
 - 6) Scoring: Five points will be allowed for each correct deciding to Deadened, Leave or Cut/Harvest each specimen. Additionally, five points will be allowed for identifying the correct reason to Deadened, Leave or Cut/Harvest each specimen. The maximum possible score for this practicum is 100 points.
 - 7) Timber Stand Improvement practicum answers will be recorded in the practicum 1 box on the scantron. The harvest option will be A, leave will be B and deadened will be C.
- d. **Compass Practicum (Even-numbered years)**
- 1) The participant will use a hand compass and pacing to the nearest full foot to simulate the determination of the property lines on a tract of timber. The compass course will have 10 marked points. The student will start at any point and record the compass reading and distance to the next point. Azimuth readings shall be recorded.
 - 2) Time: Thirty minutes will be provided for this portion of the test.
 - 3) Scoring: A total of 100 points is possible - 10 points for each correctly numbered site; 5 points for correct azimuth, and 5 points for correct distance. Partial credit will be given with a deduction of 1 point for each 2 degrees or 2 feet the participant is off the correct answer.
- e. **Chain Saw Part Identification, Troubleshooting, and Safety (Odd-numbered years)**
This practicum is divided into two parts and will be multiple choice:

Part 1: Part Identification (60 points possible)

In the chain saw part identification each participant will identify parts of a chain saw. These parts will be labeled on a saw or will be removed from the saw. The possible parts are listed below.

Air Filter	Clutch drum/Sprocket	Ignition switch
Air filter cover	Clutch shoes	Muffler
Bar nut	Crankshaft	Oil cap
Bar oil	Cylinder block/jug	Piston
Carburetor	Flywheel	Spark plug
Chain	Fuel cap	Starter assembly
Chain adjusting screw	Fuel filter	Throttle safety interlock
Chain bar	Fuel line	Throttle trigger
Chain file	Fuel mixture screw	Two-cycle oil
Chain safety catch	Handle	
Choke lever	Ignition coil	

Part 2: Troubleshooting (40 points possible)

The participant will identify *problems or troubles through multiple choice questions*. Each station will have a part, component, saw, or written situation with problem areas clearly marked. There will be 2 identical saws/components at each station. The participant may pick up parts or touch the saw. Possible problems are listed below.

Free of defects Air Filter Missing Carburetor Missing Chain Tension Problem (Chain Loose or Tight) Chain Brake Loose or Missing Chain Broken Chain Tension Screw Missing Bar is Loose Bar Nut Missing	Bar Oil Cap Missing Bumper Spike Missing Dust Cover Missing Engine Locked Up Fuel Cap Missing Fuel line disconnected Flywheel Nut Loose or Missing Fuel Mixture Screw Missing Handle Loose or Missing	Idle Mixture Screw Missing Ignition Coil Missing Ignition Switch Broke or Missing Spark plug wire disconnected Spark Plug Missing Sprocket Missing Starter Rope Broken Throttle Trigger Missing
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- 1) Time: Thirty minutes will be allowed
 - 2) Scoring: The maximum possible score for this practicum is 100 points.
 - 3) Chain saw practicum answers will be recorded on the practicum 1 box on the scantron.
- f. **Tree/Forest Disorder** (Odd-numbered years)
- 1) Symptoms of at least 10, and not more than 20, disorders from the following list will be displayed for participants to identify by common names.

Forestry Disorders 10 to 39	21 Needle Cast	32 Landscape maintenance equipment damage
10 Aphid	22 Sawfly	33 Girdling Roots
11 Scale	23 Sunscald	34 Fire Damage
12 Gypsy Moth	24 Air Pollution	35 Climatic injury: Snow, Wind, Frost, Drought, Hail
13 Douglas Fir Tussock moth	25 Canker	36 Nematode
14 Spruce Budworm	26 Damping off	37 Rust
15 Spider mite	27 Mistletoe	38 Lightning Damage
16 Cicada	28 Wetwood or Slime flux	39 Butt or Heart Rot
17 Leaf Spot	29 Chemical Damage	
18 Beetles	30 Tent Caterpillar	
19 Wood Bore	31 Mechanical logging/construction	
20 Wildlife/Livestock Damage		

- 2) The symptoms will be presented in one or more of the following forms:
 - a) Actual Sample
 - b) Picture(s)/Slide(s)
 - c) Written Description
 - d) Written case history
 Each set of symptoms representing a disorder will be designated by a number.
- 3) Time: Each participant will be allowed 30 minutes to complete this practicum.
- 4) Scoring: Each disorder will be valued equally. The maximum possible score for this practicum is 100 points.

C. Suggested References

Primary

Holland, I.I., G.L. Rolfe, and D.A. Anderson. *Forests and Forestry*, 4th Ed. Interstate Publishers, Inc., Danville, IL.

Harlow, W.M., E.S. Harrar, J.L. Hardin, and F.M. White. 1991. *Textbook of Dendrology*, 7th Ed. McGraw-Hill, St. Louis, Missouri.

McManar Collins, B. and F.M. White, *Elementary Forestry*. Reston Publishing Co., Reston, VA

U.S. Forest Service, *Silvics of Forests of the United States*. Handbook 271. U.S. Forest Service, Washington, DC.

Haygreen, J.G., and J.L. Bowyer. 1989. *Forest Products and Wood Science*, 2nd Ed. Iowa State University Press, Ames, Iowa.

Other

Wenger, K. (ed.). 1984. *Society of American Foresters*. Forestry Handbook. John Wiley & Sons, NY.

Mohlenbrock, R.H. 1983. *Forest Trees of Illinois*, 4th Ed. Illinois Dept. of Conservation.

Society of American Foresters. 1981. *Choices of Silviculture for American Forests*. Bethesda, MD.

Information Technology and Communication Services. *Land Surveys and Descriptions* (U2042). University of Illinois.

Career Development Events Handbook 2006-2010. National FFA Organization, P.O. Box 68960, 6060 FFA Drive, Indianapolis, IN.46268-6060.

D. Judging Cards

Cards for this event may be ordered from Judging card.com.