

2024 Kansas FFA Nursery and Landscape CDE Guidelines

Sunday, April 28, 2024

Lobby, 1st Floor – Throckmorton Plant Sciences Center

Time of check-in: 6:45-7:10 pm

Time of event: 7:15-9:30 pm

Dr. Cody Domenghini, Coordinator: jcdom@ksu.edu

Date of last update: January 2024

****Registration for the Nursery and Landscape CDE is separate from the Floriculture CDE registration****

General Information

Teams of four can compete; the top three scores will count for the team total. Each of the three CDE sections will account for 1/3 of each contestant's final score.

All scoring will be done with the national contest score sheets and graded by computer. This contest will be scored with JudgingCard.com. To accommodate the available scorecard formats, we reserve the ability to alter the number of questions in each section.

Official FFA dress is not required for the Nursery and Landscape CDE.

What to bring:

- A clean clipboard
- At least two No. 2 pencils
- A calculator—calculators used in this event should be battery-operated, nonprogrammable, and silent with large keys and large displays. Calculators may have only these functions: addition, subtraction, multiplication, division, equals, percent, square root, +/- key, and one memory register. No other calculators can be used during the event.
- Additional items allowed but not required include the following:
 - An architect's scale
 - An engineer's scale

What NOT to bring:

- Cell phones will not be permitted.

People permitted in contest spaces:

- Contestants
- KSU staff and volunteers assisting with the contest

No other people will be allowed to enter contest spaces at any time during the contest. If items needed for the contest are left behind, adults are not permitted to bring them to their students.

Contest sections and point values

A. General Knowledge Written Examination - (100 points) 30 minutes

- 50 multiple-choice questions over general knowledge of the horticulture industry, nursery production practices, landscape design, and maintenance

B. Plant Identification - (100 points) 30 minutes

- 50 specimens will be selected from the nursery/landscape plant list. *See attached list.*

C. Comprehensive Practicum - (100 points total) 30 minutes.

- 50 stations will include questions, materials, or examples from all three practicum areas. Individual Practicum Areas are described below:

1. Equipment and Supplies Identification

- Includes identification of tools, containers, and growing mix materials
- *See Attached:* “Nursery/Landscape Equipment and Supplies Practicum Identification List”
- Students will be given the “Nursery/Landscape Equipment and Supplies Practicum Identification List” for the event.

2. Pests, Disorders, and Beneficial Insect Identification

- Includes problems associated with insects, diseases, or environmental factors, as well as beneficial insects
- *See Attached:* “Nursery/Landscape Pests, Disorders, and Beneficial Insects Practicum Identification List.” The list will be printed on a double-sided piece of paper: one side alphabetical by scientific name, and the other alphabetical by common name.
- Students will be given the “Nursery/Landscape Pests, Disorders, and Beneficial Insects Practicum Identification List” for the event.

3. Landscape Drawing

- Evaluation or interpretation of landscape design(s)

References for the FFA Nursery and Landscape CDE Examination

The following list of references is a guide to team training and is not meant to be all-inclusive. Some content areas have more than one title listed. This reflects the wide array of quality references available for this event. No single reference is recommended as superior over others in that area. Multiple references are desirable as no single source is comprehensive for the entire nursery/landscape CDE. References other than those listed may be equally valuable resources, along with the many video and computer-based training aids available.

GENERAL REFERENCES

- Introduction to Horticulture. (Current edition.) Charles B. Schroeder, Eddie Dean Seagle, Lorrie M. Felton, John M. Ruter, William Terry Kell, and Gerard Krewer. Prentice-Hall, Inc., Englewood Cliffs, N.J. ISBN 0130364134
- Introductory Horticulture. (Current edition.) H. Edward Reiley and Carroll L. Shry, Jr. Clifton Park, N.Y.: Delmar Cengage Learning. ISBN 9781435480391
- Ornamental Horticulture. Current edition. Jack Ingels. Delmar Publishers Inc., Albany, N.Y. ISBN-13:9781435498167

- Introduction to Plant and Soil Science and Technology. (Current edition.) Ronald J. Biondo and Jasper S. Lee. Prentice-Hall, Inc., Englewood Cliffs, N.J. ISBN 0813432162

LANDSCAPE

- Landscaping Principles and Practices. (Current edition.) Jack Ingels. Delmar Publishers Inc., Albany, N.Y. ISBN 13: 9781428376410
- Landscaping Construction. (Current edition.) David Sauter. Delmar Publishers Inc., Albany, N.Y. ISBN 143549718X
- Introduction to Landscaping: Design, Construction, and Maintenance. (Current edition.) Ronald J. Biondo and Charles B. Schroeder. Prentice-Hall, Inc., Englewood Cliffs, N.J. ISBN 0133626385
- Landscape Training Manuals for Installation, Irrigation, and Maintenance Technicians. (Current edition.) National Association of Landscape Professionals, 950 Herndon Pkwy, Suite 450, Herndon, Va. 20170, https://www.landscapeprofessionals.org/LP/Store/AllBooks/SET_0050.aspx

TURF

- Turfgrass Science and Management. (Current edition.) Robert D. Emmons. Delmar Publishers Inc., Albany, N.Y. ISBN 10: 1418013307
- Turfgrass Management. (Current edition.) A.J. Turgeon. Prentice-Hall, Inc. Boston. ISBN 0137074352

NURSERY

- Plant Propagation: Principles and Practices. (Current edition.) Hudson T. Hartmann, Fred T. Davies, Jr., Dale E. Kester, and Robert L. Genieve. Prentice Hall, Boston. ISBN 0135014492
- American Standard for Nursery Stock. (Current edition.) American Association of Nurserymen, Inc., 1250 I St., NE, Suite 500, Washington, DC. (available as a pdf file free to nonmembers at <https://www.americanhort.org/education/american-nursery-stock-standards/>)

SECONDARY REFERENCES

- Practical Horticulture. (Current edition.) Laura W. Rice and Robert P. Rice. Prentice-Hall, Inc., Englewood Cliffs, N.J. ISBN 0135038669
- Landscape Design: A Practical Approach. (Current edition.) Leroy G. Hannebaum. PrenticeHall, Inc., Upper Saddle River, N.J. ISBN 0130105813
- Manual of Woody Landscape Plants. (Current edition.) Michael A. Dirr. Stipes Publishing Co., Champaign, Ill. ISBN 978-1-58874-868-3
- A Field Guide to Woody Landscape Plants of the Southeast. (Current edition.) Rex Bishop. Tea Olive Productions. Marietta, Ga. ISBN 097253430X
- Nursery Management: Administration and Culture. (Current edition.) Harold Davidson, Roy Mecklenburg, and Curtis Peterson. Prentice-Hall, Upper Saddle River, N.J. ISBN 0138579962
- Landscape Plants, Their Identification, Culture, and Use. (Current edition.) Ferrell M. Bridwell. Delmar Thomson Learning, Albany, N.Y. ISBN 0766836347
- Know It and Grow It III: A Guide to the Identification and Use of Landscape Plants. (Current edition.) Carl E. Whitcomb. Lacebark, Inc. Stillwater, Okla. ISBN 0961310910
- Manual of Herbaceous Ornamental Plants. (Current edition.) Steven M. Still. Stipes Publishing Co., Champaign, Ill. ISBN 0-87563-433-8.
- Herbaceous Perennial Plants: A Treatise on Their Identification, Culture, and Garden Attributes. (Current edition.) Allan M. Armitage, Stipes Publishing Co., Champaign, Ill. ISBN 978-1-58874-868-3.
- Landscape Construction Procedures, Techniques, and Design. (Current edition.) Floyd Giles. Stipes Publishing Co., Champaign, Ill. ISBN 0875638848

- The Turf Problem Solver: Case Studies and Solutions for Environmental, Cultural, and Pest Problems. (Current edition.) A.J. Turgeon and J.M. Vargas, Jr. J. Wiley, Hoboken, N.J. ISBN 9780471736196.

TRADE PERIODICALS

- Nursery Management Magazine. GIE Media, Inc. Valley View, OH, <https://www.nurserymag.com/>
- Lawn & Landscape Magazine. GIE Media, Inc., Valley View, OH, <https://www.lawnandlandscape.com/>
- Turf Magazine plus several other on-line titles. Moose River Media LLC., www.turfmagazine.com/

INDUSTRY CATALOGS

- Many horticultural supply company catalogs can be used for reference support on tools, equipment and supplies that may not be illustrated in other sources.
- A.M. Leonard, Inc., 665 Spiker Road, Piqua, OH 45356 (513/773-2697 or <https://www.amleo.com/>)
- Hummert International, 4500 Earth City Expressway, Earth City, Mo. 63045, 800-325-3055, <https://www.hummert.com>

WEBSITES AND PROBLEM SAMPLES

- www.ffa.org
- www.stihlusa.com
- www.kubota.com
- www.arysta-na.com
- www.treefund.org
- www.landscapeprofessionals.org/

Tiebreakers

If needed, final placings will be determined by comparing, in order, scores for the following:

- General knowledge exam
- Plant Identification
- Comprehensive Practicum

Horticulture Contest ID List

NURSERY AND LANDSCAPE PLANTS—Alphabetical by Scientific Name

001. *Abelia x grandiflora* (Glossy Abelia)
002. *Acer palmatum* cv. (Japanese Maple)
003. *Acer platanoides* cv. (Norway Maple)
004. *Acer rubrum* cv. (Red Maple)
005. *Acer saccharinum* (Silver Maple)
006. *Acer saccharum* cv. (Sugar Maple)
007. *Ajuga reptans* cv. (Carpet Bugle)
008. *Aquilegia x hybrida* cv. (Columbine)
009. *Berberis* sp. and cv. (Barberry)
010. *Betula nigra* (River Birch)
011. *Buchloe dactyloides* (Buffalograss)
012. *Buxus* sp. and cv. (Boxwood)
013. *Catalpa* sp. (Catalpa)
014. *Cedrus atlantica* 'Glauca' (Blue Atlas Cedar)
015. *Celtis occidentalis* (Hackberry)
016. *Cercis canadensis* (Redbud)
017. *Chaenomeles speciosa* (Japanese Quince)
018. *Clematis* hybrid (Clematis)
019. *Colchicum autumnale* (Crocus)
020. *Cornus florida* cv. (Flowering Dogwood)
021. *Cotoneaster* sp. (Cotoneaster)
022. *Crataegus phaenopyrum* (Washington Hawthorn)
023. *Cynodon dactylon* (Bermudagrass)
024. *Echinacea purpurea* (Purple Coneflower)
025. *Euonymus alatus* (Winged Euonymus)
026. *Euonymus fortunei* cv. (Wintercreeper)
027. *Festuca* sp. (Fescue)
028. *Forsythia x intermedia* cv. (Border Forsythia)
029. *Fraxinus* sp. (Ash)
030. *Ginkgo biloba* (Ginkgo, Maidenhair Tree)
031. *Gleditsia triacanthos* var. *inermis* (Thornless Honeylocust)
032. *Gymnocladus dioica* (Kentucky Coffeetree)
033. *Hedera helix* cv. (English Ivy)
034. *Heemerocallis* sp. and cv. (Daylily)
035. *Hibiscus syriacus* (Rose-of-Sharon)
036. *Hosta x hybrida* cv. (Plantain Lily)
037. *Hyacinthus orientalis* (Hyacinth)
038. *Hydrangea macrophylla* (Bigleaf Hydrangea)
039. *Hydrangea quercifolia* (Oakleaf Hydrangea)
040. *Ilex* sp. (Holly)
041. *Iris x germanica florentina* cv. (Bearded Iris)
042. *Juglans nigra* (Black Walnut)
043. *Juniperus* sp. (Juniper)
044. *Koelreuteria paniculata* (Goldenraintree)
045. *Lagerstroemia indica* cv. (Crapemyrtle)
046. *Leucanthemum x superbum* cv. (Shasta Daisy)
047. *Liquidambar styraciflua* (Sweetgum)
048. *Liriodendron tulipifera* (Tuliptree)
049. *Lonicera japonica* (Japanese Honeysuckle)
050. *Maclura pomifera* (Osage Orange)
051. *Magnolia x soulangiana* (Saucer Magnolia)
052. *Mahonia aquifolium* (Oregon Grapeholly)
053. *Malus* sp. and cv. (Flowering Crabapple)
054. *Morus* sp. (Mulberry)
055. *Myrica pensylvanica* (Bayberry)
056. *Nandina domestica* (Heavenly Bamboo)
057. *Narcissus pseudonarcissus* cv. (Daffodil)
058. *Pachysandra terminalis* (Japanese Spurge)
059. *Paeonia hybrida* cv. (Peony)
060. *Parthenocissus tricuspidata* (Boston Ivy)
061. *Philadelphus coronarius* (Sweet Mockorange)
062. *Picea abies* (Norway Spruce)
063. *Picea pungens* cv. (Colorado Blue Spruce)
064. *Pinus mugo* (Mugo Pine)
065. *Pinus nigra* (Austrian Pine)
066. *Pinus ponderosa* (Ponderosa Pine)
067. *Pinus strobus* (Eastern White Pine)
068. *Pinus sylvestris* (Scots Pine)
069. *Platanus occidentalis* (Sycamore)
070. *Poa pratensis* (Kentucky Bluegrass)
071. *Populus deltoides* (Cottonwood)
072. *Potentilla fruticosa* (Shrubby Cinquefoil)
073. *Prunus serrulata* (Japanese Flowering Cherry)
074. *Pyracantha coccinea* (Firethorn)
075. *Pyrus calleryana* (Callery Pear)
076. *Quercus macrocarpa* (Burr Oak)
077. *Quercus palustris* (Pin Oak)
078. *Quercus rubra* (Red Oak)
079. *Rhododendron* sp. and cv. (Azalea)
080. *Rhus* sp. (Sumac)
081. *Rosa* sp. (Landscape/Shrub Rose)
082. *Rudbeckia hirta* (Rudbeckia)
083. *Salix* sp. (Willow)
084. *Sedum* sp. (Sedum)
085. *Sempervivum tectorum* (Hen and Chicks)
086. *Spiraea* sp. and cv. (Spirea)
087. *Syringa vulgaris* cv. (Common Lilac)
088. *Taxodium distichum* (Baldcypress)
089. *Taxus* sp. and cv. (Yew)
090. *Thuja occidentalis* cv. (American Arborvitae)
091. *Tilia* sp. (Linden)
092. *Tulipa* sp. and cv. (Tulip)
093. *Ulmus americana* (American Elm)
094. *Ulmus parvifolia* (Chinese Elm)
095. *Ulmus pumila* (Siberian Elm)
096. *Viburnum* sp. (Viburnum)
097. *Vinca minor* (Periwinkle)
098. *Weigela florida* cv. (Old-fashioned Weigela)
099. *Wisteria sinensis* (Chinese Wisteria)
100. *Yucca filamentosa* (Adam's Needle Yucca)

Horticulture Contest ID List
NURSERY AND LANDSCAPE PLANTS—Alphabetical by Common Name

01. Abelia, Glossy (*Abelia x grandiflora*)
90. Arborviate, American (*Thuja occidentalis* cv.)
029. Ash (*Fraxinus* sp.)
079. Azalea (*Rhododendron* sp. and cv.)
088. Baldcypress (*Taxodium distichum*)
56. Bamboo, Heavenly (*Nandina domestica*)
09. Barberry (*Berberis* sp. and cv.)
055. Bayberry (*Myrica pensylvanica*)
23. Bermudagrass (*Cynodon dactylon*)
10. Birch, River (*Betula nigra*)
070. Bluegrass, Kentucky (*Poa pratensis*)
012. Boxwood (*Buxus* sp. and cv.)
11. Buffalograss (*Buchloe dactyloides*)
007. Bugle, Carpet (*Ajuga reptans* cv.)
13. Catalpa (*Catalpa* sp.)
14. Cedar, Blue Atlas (*Cedrus atlantica* 'Glauca')
73. Cherry, Japanese Flowering (*Prunus serrulata*)
072. Cinquefoil, Shrubby (*Potentilla fruticosa*)
18. Clematis (*Clematis* hybrid)
032. Coffeetree, Kentucky (*Gymnocladus dioicus*)
008. Columbine (*Aquilegia x hybrida* cv.)
24. Coneflower, Purple (*Echinacea purpurea*)
021. Cotoneaster (*Cotoneaster* sp.)
071. Cottonwood (*Populus deltoides*)
053. Crabapple, Flowering (*Malus* sp. and cv.)
45. Crapemyrtle (*Lagerstroemia indica* cv.)
19. Crocus (*Colchicum autumnale*)
57. Daffodil (*Narcissus pseudonarcissus* cv.)
46. Daisy, Shasta (*Leucanthemum x superbum* cv.)
034. Daylily (*Hemerocallis* sp. and cv.)
20. Dogwood, Flowering (*Cornus florida* cv.)
93. Elm, American (*Ulmus americana*)
94. Elm, Chinese (*Ulmus parvifolia*)
95. Elm, Siberian (*Ulmus pumila*)
25. Euonymus, Winged (*Euonymus alatus*)
027. Fescue (*Festuca* sp.)
74. Firethorn (*Pyracantha coccinea*)
028. Forsythia, Border (*Forsythia x intermedia* cv.)
030. Ginkgo, Maidenhair Tree (*Ginkgo biloba*)
044. Goldenraintree (*Koelreuteria paniculata*)
052. Grapeholly, Oregon (*Mahonia aquifolium*)
15. Hackberry (*Celtis occidentalis*)
022. Hawthorn, Washington (*Crataegus phaenopyrum*)
085. Hen and Chicks (*Sempervivum tectorum*)
40. Holly (*Ilex* sp.)
031. Honeylocust, Thornless (*Gleditsia triacanthos* var. *inermis*)
049. Honeysuckle, Japanese (*Lonicera japonica*)
37. Hyacinth (*Hyacinthus orientalis*)
38. Hydrangea, Bigleaf (*Hydrangea macrophylla*)
39. Hydrangea, Oakleaf (*Hydrangea quercifolia*)
41. Iris, Bearded (*Iris x germanica florentina* cv.)
60. Ivy, Boston (*Parthenocissus tricuspidata*)
033. Ivy, English (*Hedera helix* cv.)
043. Juniper (*Juniperus* sp.)
087. Lilac, Common (*Syringa vulgaris* cv.)
036. Lily, Plantain (*Hosta x hybrida* cv.)
91. Linden (*Tilia* sp.)
051. Magnolia, Saucer (*Magnolia x soulangiana*)
02. Maple, Japanese (*Acer palmatum* cv.)
03. Maple, Norway (*Acer platanoides* cv.)
04. Maple, Red (*Acer rubrum* cv.)
05. Maple, Silver (*Acer saccharinum*)
06. Maple, Sugar (*Acer saccharum* cv.)
61. Mockorange, Sweet (*Philadelphus coronarius*)
054. Mulberry (*Morus* sp.)
76. Oak, Burr (*Quercus macrocarpa*)
77. Oak, Pin (*Quercus palustris*)
78. Oak, Red (*Quercus rubra*)
050. Orange, Osage (*Maclura pomifera*)
75. Pear, Callery (*Pyrus calleryana*)
059. Peony (*Paeonia hybrida* cv.)
97. Periwinkle (*Vinca minor*)
065. Pine, Austrian (*Pinus nigra*)
067. Pine, Eastern White (*Pinus strobus*)
064. Pine, Mugo (*Pinus mugo*)
066. Pine, Ponderosa (*Pinus ponderosa*)
068. Pine, Scots (*Pinus sylvestris*)
017. Quince, Japanese (*Chaenomeles speciosa*)
16. Redbud (*Cercis canadensis*)
035. Rose-of-Sharon (*Hibiscus syriacus*)
81. Rose, Landscape/Shrub (*Rosa* sp.)
82. Rudbeckia (*Rudbeckia hirta*)
084. Sedum (*Sedum* sp.)
086. Spirea (*Spiraea* sp. and cv.)
063. Spruce, Colorado Blue (*Picea pungens* cv.)
62. Spruce, Norway (*Picea abies*)
58. Spurge, Japanese (*Pachysandra terminalis*)
080. Sumac (*Rhus* sp.)
47. Sweetgum (*Liquidambar styraciflua*)
069. Sycamore (*Platanus occidentalis*)
92. Tulip (*Tulipa* sp. and cv.)
48. Tuliptree (*Liriodendron tulipifera*)
96. Viburnum (*Viburnum* sp.)
42. Walnut, Black (*Juglans nigra*)
98. Weigela, Old-fashioned (*Weigela florida* cv.)
83. Willow (*Salix* sp.)
26. Wintercreeper (*Euonymus fortunei* cv.)
99. Wisteria, Chinese (*Wisteria sinensis*)
089. Yew (*Taxus* sp. and cv.)
100. Yucca, Adam's Needle (*Yucca filamentosa*)

Nursery/Landscape Equipment and Supplies Practicum Identification List

<u>No.</u>	<u>Item Name</u>	<u>No.</u>	<u>Item Name</u>
1	anvil-and-blade pruner	41	mist nozzle (mist bed)
2	ball cart (B&B truck)	42	mower blade balancer
3	bark mulch	43	nursery container
4	bow saw	44	oscillating sprinkler
5	broadcast (cyclone) spreader	45	peat moss
6	bubbler head, irrigation	46	pick
7	bulb planter	47	planting/earth/soil auger
8	bunker rake	48	pole pruner
9	burlap	49	polyethylene pipe
10	compressed air sprayer tank pressurized	50	pop-up irrigation head
11	core aerifier	51	post-hole digger
12	chain saw	52	power blower
13	cut-off machine	53	power hedge trimmer
14	drip emitter, irrigation	54	pot-in-pot units
15	dry-lock wall block	55	pump sprayer tank not pressurized
16	edger (power or hand)	56	propagation mat
17	edging	57	pruning saw
18	erosion netting	58	reel mower
19	fertilizer injector	59	resin-coated fertilizer
20	fertilizer tablet	60	rotary mower
21	garden (spading) fork	61	rototiller
22	garden (bow) rake	62	round point shovel
23	grafting band	63	scoop shovel
24	grafting knife	64	shade fabric
25	granular fertilizer	65	sharpening stone
26	gravity (drop) spreader	66	siphon proportioner
27	ground (pelleted) limestone	67	soaker hose
28	hedge shears	68	soil sampling tube
29	hoe	69	solenoid valve
30	hook-and-blade (bypass) pruners	70	spade
31	hose-end repair fitting	71	sphagnum moss
32	hose-end sprayer	72	square point (flat) shovel
33	hose-end washer	73	string trimmer
34	hose repair coupling	74	thatch rake
35	impact sprinkler	75	tree caliper
36	landscape fabric	76	tree wrap
37	leaf rake	77	trowel
38	loppers	78	vertical mower
39	mattock	79	water breaker
40	measuring wheel	80	wire tree basket

Nursery/Landscape Pests, Disorders, and Beneficial Insects

Practicum Identification List

Numbering is continuous for JudgingCard scoring form

Insects

- 81 Aphid
- 82 Bagworm
- 83 10
- 84 Leafhopper
- 85 Leaf Miner
- 86 Scale
- 87 Spider Mite
- 88 Snail/Slug
- 89 Whitefly
- 90 White Grub

Diseases

- 91 Anthracnose
- 92 Apple Scab
- 93 Black Spot
- 94 Botrytis
- 95 Canker
- 96 Cedar-Apple Rust
- 97 Crown Gall
- 98 Fireblight
- 99 Powdery Mildew
- 100 Root Rot

Weeds

- 101 Annual Bluegrass
- 102 Broadleaf Plantain
- 103 Buckthorn Plantain
- 104 Chickweed
- 105 Crabgrass
- 106 Dandelion
- 107 Henbit
- 108 Nutsedge
- 109 Oxalis
- 110 Purslane
- 111 Clovers

Physiological Problems

- 112 Frost/Freeze Injury
- 113 Iron Deficiency
- 114 Leaf Scorch (drought/winter burn)
- 115 Nitrogen Deficiency
- 116 Pot-Bound Roots
- 117 String Trimmer Injury
- 118 2, 4-D Injury

Beneficial Insects

- 119 Praying Mantis
- 120 Lady Beetle
- 121 Paper Wasp
- 122 Lacewing
- 123 Spider