

**2017 NACTA HORTICULTURE CONTEST**  
**Hosted by Kansas State University**

**Friday, April 7, 2017, 1:00 pm**  
**Total Time Allowed - 3 hours**  
**Location: Room 2024 Throckmorton Hall**

**Contest Coordinators:**     **Dr. Kim Williams <kwilliam@ksu.edu>**  
                                      **Dr. Cathie Lavis <clavis@ksu.edu>**

**Teams and Eligibility:**

1. All contestants must be currently enrolled in a two-year or a four-year institution and pursuing an undergraduate degree. Two-year and four-year institutions will compete in separate divisions, but contest rules and components are the same for both divisions. Separate awards will be made for both team and overall individuals in each division.
2. Each school may enter one team consisting of four (4) officially-registered members and team members must be designated prior to the start of the contest. All four members will be eligible for individual awards, but only the top three (3) scores will be used for the team score. If only three members are registered for a team, all three scores will count.
3. Institutions may enter as many additional official contestants as they want in addition to the official team. Additional contestants will compete for individual awards, but their scores will not count toward the team score. Additional contestants will pay the full registration fee. If not enough members are present from an institution to comprise a team, attendees may compete as officially registered individual contestants.
4. A student may not compete in this contest if he/she has participated as a scored, official contestant in a national NACTA Horticulture contest in any previous year in the same division. If he/she previously competed in the two-year college division, he/she may compete once more in the four-year college division.

**Event Description:**

Teams and individual participants will compete in five parts of the contest: General Knowledge Exam, Plant Identification, Horticulture Tools and Pest Identification, Plant Judging, and Problem Solving. The following outline provides an overview of the content and the points possible for each component.

**Part 1: General Knowledge Exam – 100 points**

The general knowledge exam will consist of 50 multiple choice questions. The exam will cover all aspects of horticulture except floral design.

**Part 2: Plant Identification – 100 points**

This portion of the contest will consist of 50 live plant specimens. Plants will be selected from the attached 2017 NACTA Horticulture Plant Identification List. Contestants will identify specimens from a numbered list provided that will include both common and scientific names.

### **Part 3: Horticulture Tools and Pest Identification – 100 points**

This portion of the contest will consist of 50 specimens that will primarily be presented as live samples, but photos may be used if needed. A hand-lens may be used. All specimens will be selected from the attached 2017 NACTA Horticulture Tools and Pests List. Contestants will identify samples from numbered list provided.

### **Part 4: Plant Judging – 50 points**

Five classes of plants will be ranked from 1 to 4. Classes will be derived from woody landscape plants, interior foliage plants, and annual and perennial herbaceous plants.

### **Part 5: Problem Solving – 50 points**

This portion of the contest will consist of 5 questions that are designed to evaluate competitors' ability to solve horticultural problems in categories such as cost analysis of greenhouse or nursery crop production, reading a landscape drawing and calculating cost of materials and supplies, and solving other basic horticulture problems such as fertilizer calculations. A simple calculator will be allowed.

### **Scoring and Contest Rules:**

1. Each participant will complete all five parts of the contest for a possible total score of 400 points per contestant. All four team members' individual scores will be combined for a possible total of 1,600 points per team.
2. In the event of a tie, scores on the General Knowledge Exam followed by the Plant Identification component followed by the Horticulture Tools and Pest Identification component will be used to break the tie.
3. Contestants will not be allowed to touch or handle any plant material during any portion of the competition. An infraction of this policy is sufficient to result in team elimination from the competition.
4. No electronic devices, including phones and smart watches, are allowed. A simple calculator may be used only during the Problem Solving component of the contest. A hand-lens may be used during the Horticulture Tools and Pest Identification component of the contest.

### **Suggested References:**

#### GENERAL

Manual of Woody Landscape Plants. Current edition. Michael A. Dirr. Stipes Publishing Co., Champaign, IL. ISBN 978-1-58874-868-3

Manual of Herbaceous Ornamental Plants. Current edition. Steven M. Still. Stipes Publishing Co., Champaign, IL. 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, IL. ISBN 978-1-58874-868-3.

Practical Horticulture. Current edition. Laura W. Rice and Robert P. Rice. Prentice-Hall, Inc., Englewood Cliffs, NJ. ISBN 0135038669

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, NJ. ISBN 0130364134

Introductory Horticulture. Current edition. H. Edward Reiley and Carroll L. Shry, Jr. Clifton Park, NY: Delmar Cengage Learning. ISBN 9781435480391 •

Ornamental Horticulture. Current edition. Jack Ingels. Delmar Publishers Inc., Albany, NY. ISBN-13: 9781435498167

### LANDSCAPE & DESIGN

Landscaping Construction. Current edition. David Sauter. Delmar Publishers Inc., Albany, NY. ISBN 143549718X

Introduction to Landscaping: Design, Construction, and Maintenance. Current edition. Ronald J. Biondo and Charles B. Schroeder. Prentice-Hall, Inc., Englewood Cliffs, NJ. 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 <http://www.landscapetechnician.net> TURF

### TURFGRASS

Turfgrass Science and Management. Current edition. Robert D. Emmons. Delmar Publishers Inc., Albany, NY. 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

Nursery Management: Administration and Culture. Current edition. Harold Davidson, Roy Mecklenburg, and Curtis Peterson. PrenticeHall, Upper Saddle River, NJ. ISBN 0138579962

### GREENHOUSE

Greenhouse Operation and Management – Paul V. Nelson – Seventh Edition

Ball Publishing: Ball Redbook, Volume 1&2, 18th Edition

## 2017 NACTA HORTICULTURE PLANT IDENTIFICATION LIST

### Common Name

### Scientific Name

#### BEDDING PLANTS

Ageratum	<i>Ageratum mexicanum</i>
China Aster	<i>Callistephus chinensis</i>
Cockscomb	<i>Celosia argentea</i>
Coleus	<i>Solenostemon scutellaroides</i>
Dusty Miller	<i>Senecio cineraria</i>
Impatiens	<i>Impatiens</i> hybrid
Ivy Geranium	<i>Pelargonium peltatum</i>
Madagascar Periwinkle	<i>Catharanthus roseus</i>
Marguerite Daisy	<i>Argyranthemum frutescens</i>
Marigold	<i>Tagetes</i> species
Pansy	<i>Viola x wittrockiana</i>
Petunia, Common Garden	<i>Petunia x hybrida</i>
Regal (Lady Washington) Geranium	<i>Pelargonium x domesticum</i>
Salvia	<i>Salvia splendens</i>
Sweet Alyssum	<i>Lobularia maritima</i>
Snapdragon	<i>Antirrhinum majus</i>
Wax Begonia	<i>Begonia x semperflorens-cultorum</i>
Zinnia	<i>Zinnia elegans</i>
Zonal Geranium	<i>Pelargonium x hortorum</i>

#### TURFGRASSES

Bermudagrass	<i>Cynodon dactylon</i> cv.
Bluegrass, Kentucky	<i>Poa pratensis</i> cv.
Buffalograss	<i>Buchloe dactyloides</i>
Fescue, tall	<i>Festuca arundinacea</i>
Zoysiagrass	<i>Zoysia</i> sp.

#### GROUND COVERS & VINES

Ajuga, Carpet Bugle	<i>Ajuga reptans</i> cv.
Boston Ivy	<i>Parthenocissus tricuspidata</i>
Clematis	<i>Clematis</i> sp.
English Ivy	<i>Hedera helix</i>
Honeysuckle, Halls	<i>Lonicera japonica</i>
Japanese Spurge	<i>Pachysandra terminalis</i>
Periwinkle	<i>Vinca minor</i>
Wintercreeper	<i>Euonymus fortunei</i> cv.

#### SHRUBS

Arborvitae	<i>Thuja occidentalis</i> cv.
Barberry, Japanese	<i>Berberis thunbergii</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Cotoneaster	<i>Cotoneaster</i> sp.
Crapemyrtle	<i>Lagerstroemia indica</i>

Euonymus, Winged  
Firethorn  
Forsythia  
Holly  
Hydrangea, Oakleaf  
Juniper  
Lilac, Common  
Pine, Mugo  
Quince, Japanese  
Rose-of-Sharon  
Spirea, Bumald  
Sweet Mockorange  
Viburnum  
Yew

*Euonymus alatus*  
*Pyracantha coccinea*  
*Forsythia x intermedia* cv.  
*Ilex* sp.  
*Hydrangea quercifolia*  
*Juniperus* sp.  
*Syringa vulgaris* cv.  
*Pinus mugo*  
*Chaenomeles speciosa* cv.  
*Hibiscus syriacus*  
*Spirea x bumalda*  
*Philadelphus coronarius*  
*Viburnum* sp.  
*Taxus* sp.

### **FOLIAGE PLANTS**

Aluminum Plant  
Artillery Plant  
Asparagus “Fern”  
Barrel Cactus  
Benjamin Fig  
Boston Fern  
Chinese Evergreen; Aglaonema  
Corn Plant *Dracaena*  
Creeping Rubber Plant  
Croton  
Crown of Thorns  
Cutleaf “Philodendron”  
Rubber Plant  
Dwarf Shefflera; Dwarf Octopus Tree  
Emerald Ripple Peperomia  
Friendship Plant  
Golden Pothos; Devil’s Ivy  
Heartleaf Philodendron  
Jade Plant  
Nephtytis  
Nerve Plant  
Norfolk Island Pine  
Parlor Palm  
Peace Lily; White Anthurium  
Prayer Plant  
(Prickly Pear) Cactus  
“Purple Passion” Velvet Plant  
Red Edged *Dracaena*  
Shrimp Plant  
Snake Plant  
Spider Plant  
Spotted Dumbcane  
Sprenger “Fern”  
Swedish Ivy  
Variegated Peperomia

*Pilea cadierei*  
*Pilea microphylla*  
*Asparagus setaceus*  
*Echinocactus*  
*Ficus benjamina* ‘Exotica’  
*Nephrolepis exaltata*  
*Aglaonema commutatum*  
*Dracaena fragrans* ‘Massangeana’  
*Ficus pumila*  
*Codiaeum variegatum pictum*  
*Euphorbia milii splendens*  
*Monstera deliciosa*  
*Ficus elastica*  
*Heptapleurum arboricola*  
*Peperomia caperata*  
*Pilea involucrata*  
*Epipremnum aureum*  
*Philodendron scandens oxycardium*  
*Crassula argentea*  
*Syngonium podophyllum*  
*Fittonia verschaffeltii*  
*Araucaria heterophylla*  
*Chamaedorea elegans*  
*Spathiphyllum clevelandii*  
*Maranta leuconeura kerchoviana*  
*Opuntia* tribe  
*Gynura aurantiaca*  
*Dracaena cincta*  
*Justicia brandegeana*  
*Sansevieria trifasciata*  
*Chlorophytum comosum*  
*Dieffenbachia maculata*  
*Asparagus densiflorus* ‘Sprenger’  
*Plectranthus mummularis*  
*Peperomia obtusifolia* ‘Variegata’

Wandering Jew  
Watermelon Peperomia  
Wax Plant  
Zebra Plant, Aphelandra

*Zebrina pendula*  
*Peperomia argyreia*  
*Hoya carnosa*  
*Aphelandra squarrosa*

## **FLOWERING PLANTS**

African Violet  
Amaryllis  
Astilbe  
Azalea  
Bird of Paradise  
Cattleya Orchid Hybrid  
Christmas Cactus  
Common Garden Canna  
Cymbidium Orchid  
Daffodil  
Daylily  
Dutch Iris  
Fancy-leaved Caladium  
Flag, Bearded Iris  
Fleming's Lily; Anthurium  
Florist's Cineraria  
Florist's Chrysanthemum  
Florist's Cyclamen  
Freesia  
Gardenia  
German (Persian) Violet  
(Garden) Gladiolus  
Gloxinia  
Hens and Chicks  
Plantain Lily; Hosta  
Hyacinth  
Hybrid (Garden) Lily  
Hybrid Tea Rose  
French (Florist's) Hydrangea  
Kalanchoe  
Ladyslipper Orchid  
Peony  
Phalenopsis (Butterfly) Orchid  
Pocketbook Plant  
Poinsettia  
Shasta Daisy  
Silver Dollar Gum  
Spring Heath  
Statice  
Stephanotis  
Thanksgiving Cactus; Crab Cactus  
Transvaal Daisy  
Tuberous Begonia  
Tulip

*Saintpaulia ionantha*  
*Hippeastrum* hybrid  
*Astilbe* hybrid  
*Rhododendron* sp.  
*Strelitzia reginae*  
*Cattleya*  
*Schlumbergera bridgesii*  
*Canna x generalis*  
*Cymbidium*  
*Narcissus pseudonarcissus*  
*Hemerocallis*  
*Iris x xiphium*  
*Caladium x hortulanum*  
*Iris x germanica florentina*  
*Anthurium x andraeanum*  
*Senecio x hybridus*  
*Chrysanthemum x morifolium*  
*Cyclamen x persicum*  
*Freesia x hybrida*  
*Gardenia jasminoides* 'Fortuniana'  
*Exacum affine*  
*Gladiolus x hortulanus*  
*Sinningia speciosa* Fyfiana Group  
*Echeveria*  
*Hosta undulata*  
*Hyacinthus orientalis*  
*Lilium x hybridum*  
*Rosa* hybrid Class Hybrid Tea  
*Hydrangea macrophylla*  
*Kalanchoe x blossfeldiana*  
*Paphiopedilum x hybrid*  
*Paeonia* species  
*Phalaenopsis*  
*Calecolaria crenatiflora*  
*Euphorbia pulcherrima*  
*Leucanthemum x superbum*  
*Eucalyptus polyanthemos*  
*Erica carnea*  
*Limonium sinuatum*  
*Stephanotis floribunda*  
*Schlumbergera truncata*  
*Gerbera jamesonii*  
*Begonia x tuberhybrida*  
*Tulipa* species

## TREES

Ash, Green	<i>Fraxinus pennsylvanica</i>
Baldcypress	<i>Taxodium distichum</i>
Birch, River	<i>Betula nigra</i>
Catalpa	<i>Catalpa</i> sp.
Cottonwood	<i>Populus deltoides</i>
Coffeetree, Kentucky	<i>Gymnocladus dioicus</i>
Crabapple, Flowering	<i>Malus</i> sp.
Elm, American	<i>Ulmus americana</i>
Elm, Chinese	<i>Ulmus parvifolia</i>
Elm, Siberian	<i>Ulmus pumila</i>
Gingko	<i>Ginkgo biloba</i>
Goldenraintree	<i>Koelreuteria paniculata</i>
Hackberry	<i>Celtis occidentalis</i>
Honeylocust	<i>Gleditsia triacanthos</i>
Linden, Littleleaf	<i>Tilia cordata</i>
Magnolia, Saucer	<i>Magnolia x soulangiana</i>
Maple, Japanese	<i>Acer palmatum</i>
Maple, Norway	<i>Acer platanoides</i>
Maple, Red	<i>Acer rubrum</i>
Maple, Silver	<i>Acer saccharinum</i>
Maple, Sugar	<i>Acer saccharum</i>
Mulberry	<i>Morus</i> sp.
Oak, Bur	<i>Quercus macrocarpa</i>
Oak, Chinquapin	<i>Quercus muehlenbergii</i>
Oak, Pin	<i>Quercus palustris</i>
Oak, Red	<i>Quercus rubra</i>
Osage Orange	<i>Maclura pomifera</i>
Pear, Callery	<i>Pyrus callervana</i>
Pine, Scotch	<i>Pinus sylvestris</i>
Pine, Ponderosa	<i>Pinus nigra</i>
Pine, White	<i>Pinus strobus</i>
Redbud	<i>Cercis canadensis</i>
Russian Olive	<i>Elaeagnus angustifolia</i>
Spruce, Colorado	<i>Picea pungens</i>
Spruce, Norway	<i>Picea abies</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Plantanus occidentalis</i>
Willow	<i>Salix</i> sp.

## 2017 NACTA HORTICULTURE TOOLS AND PEST IDENTIFICATION LIST

<b>Item Name</b>	<b>Item Name</b>	<b>Item Name</b>
aerifier	landscape fabric	slope finder
anvil-and-blade pruner	leaf rake	slug
aphid	leaf miner	snail
architects scale	LED lamp	snowfence
ball cart (B&B truck)	light meter	soaker hose
ballast	loppers	sod lifter
bark mulch	mattock	soil auger
bark medium	maul	soil sampling tube
botrytis (gray mold)	mealybug	soil moisture tester
bow saw	mist nozzle (mist bed)	solenoid valve
brick paver	mower blade balancer	spaghetti tubing
broadcast (cyclone) spreader	nursery container, 1 gal.	spark plug gap gauge
bulb planter	nursery container, 2 gal.	sphagnum moss
burlap	nursery container, 3 gal.	spray suit
cell pack inserts	nursery spade	square point (flat)
compressed air sprayer	oscillating sprinkler	straight edge
chain saw	parasitic wasp	string trimmer
coir	peat moss	sticky card
downey mildew	perlite	tape measure
duster	pH meter	thatch rake
duster mask	pick axe	thrips
EC meter	planting bar	timeclock
edger	plug tray	topsoil
edging	pole pruner	tree caliper
engineers scale	polyethylene film	tree wrap
erosion netting	polyethylene pipe	trowel
fertilizer tablet	post-hole digger	T-square
fertilizer, soluble	pot, azalea or geranium	twospotted spider mite
fungus gnat	pot, standard greenhouse	turf thatcher
galvanized pipe	power blower	vermiculite
garden (spading) fork	power rake	verticillium wilt
garden (bow) rake	pruning saw	verticut mower
garden spade	reel mower	water breaker
gas mask	resin-coated fertilizer	whitefly
grading rake (aluminum)	respirator	wire tree basket
grafting band	rockwool, shredded	
grafting tool	root rot (disease)	
granular fertilizer	rotary mower	
gravity (drop) spreader	rototiller	
grass shears	round point shovel	
ground limestone	rust (disease)	
hedge shears	sand	
high-intensity discharge lamp	scale, hard	
hoe	scale, soft	
hook-and-blade (bypass)	scoop shovel	
hose-end repair fitting	shade fabric	
hose-end sprayer	sharpening stone	
hose-end washer	shorefly	
hose repair coupling	shutter fan	
impulse sprinkler	siphon proportioner	



