

Floriculture

Nebraska Career Development Event
Handbook and Rules for 2018-2020

1. PURPOSE

Floriculture is a discipline of horticulture concerned with the growing and marketing of flowers and ornamental plants, in addition to, usage in floral arrangement and design.

The floriculture industry encompasses the following:

- Greenhouse and field production of floral and ornamental plants
- Retailing of container grown plants, flowers and cut floral products
- Management of floricultural crop production and retail operations
- Floral design, marketing, and distribution

The Nebraska Floriculture Career Development Event is designed to create an interest in careers within the Floricultural industry through instruction and hands on technical skill development delivered through the agriculture education curriculum.

Agricultural Education courses that may align to Floriculture include: Plant Science, Horticulture, Nursery Management, Landscaping, Greenhouse Management, Floral Design, Plant Biology, and others.

2. OBJECTIVES

A. Identify plant materials, supplies, and equipment utilized in the floriculture industry.

- a. Floriculture Plant Identification List (Appendix 1)
- b. Floriculture Equipment & Supply Identification List (Appendix 2)

B. Demonstrate an understanding of life sciences through skill development in plant propagation, culture, methodology, environmental management, and biotic interactions

- a. CDE activities may include:
 - i. Demonstrate how to make asexual cuttings: tip or terminal, stem section, leaf-petiole, leaf-section, and cane types
 - ii. Apply knowledge of proper plant irrigation, fertilizer injector operation, and plant environment modification techniques (See Resource Materials: “Hobby Greenhouse Operations and Practices” and “Fertilizer Injectors: Selection, Maintenance and Calibration”.)
 - iii. Demonstrate the ability to read a chemical or fertilizer label, perform calculations, and answer multiple choice questions related to the proper and safe use of the product.
 - iv. Evaluate normal and abnormal plants (live or digital images) to specify their need for care of culture activity, such as: plant stretch means light is too low or plants are needing spaced out; greying or wilting indicates water need or some other condition is present; plant maturation, stalling, or senescence.

C. Demonstrate knowledge of plant production methods and systems used in the floriculture industry

- a. CDE activities may include:
 - i. Apply knowledge on proper use and selection of tools and equipment used for greenhouse plant production, outdoor field production, post-harvest handling, shipping, and receipt of materials. (See Resource Materials: *Introductory Horticulture* textbook or “Appendix 2 - Floriculture Equipment and Supply Identification List”.)

D. Identify atypical plant symptoms, plausible causal agent, and recommended corrective action

- a. View live or digital image plant specimens to:
 - i. Identify the problem as one of the following: disease, insect/mite, or nutritional/environmental.
 - ii. Identify the most appropriate causal agent and:
 1. Recommend the most appropriate corrective action.
 2. See Resource Materials: Appendix 3 Plant Disorders, Causal Agents, and Control Methods.

E. Demonstrate proper handling and preparation of fresh cut materials for the floral industry and develop principle of design skills

- a. Contestants will be provided with "raw" plant materials which must be properly prepared for design work (leaves removed, broken materials removed, stems cut properly) and used correctly in the assigned design. The design will be scored on mechanics and principles of design, along with durability in handling and packaging.
 - b. Create a price sheet for their completed floral arrangement (See Resource Materials: Appendix 4 Blank Sample Pricing Worksheet and Appendix 5 Completed Sample Pricing Worksheet).
 - c. Work together as a team on a group project, delegating duties to complete activity in the time allotted.
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3. ELIGIBILITY

This event is open to students in grades 9-12. The top 25% of schools in a district may qualify a team to the state CDE. Teams shall consist of four students. Schools must register a full team, however teams with less than four students may participate and will not be eligible to earn all points.

4. RECOMMENDED ATTIRE

It's recommended that FFA members wear Official FFA Dress. Jackets may be removed during hands-on portions. Non-FFA members should wear professional dress.

5. REQUIRED SUPPLIES AND EQUIPMENT

Though the following items are required, a limited number of items will be available at the competition and availability will be at the risk of the contestant. No scoring adjustments will be made, if no items are available, the competitor will have to improvise to the best of their ability.

Instructors will be notified of specific tools and supplies necessary to bring to the state CDE two weeks prior to the state CDE.

Each student must bring to the competition:

- Two mechanical or regular type sharpened pencils
- Floral cutters/clippers/shears
- Floral knife
- Ribbon scissors
- Florist tape
- Florist wire - 22-24 (no spooled)
- 2 yards #3 Ribbon, preferably white, off-white, or other neutral color (wired or not wired ribbon)
- Floral adhesive tape (such as "U-Glu", no fluid or hot glues allowed)
- Small wire cutter (recommended)
- Needle nose plier (recommended)
- Non-graphing calculator (optional) - phones and tablets are not permitted.
- Other required items may be announced via email, a minimum of two weeks prior to event (i.e. corsage packaging, pins, etc.)
- Other items brought in for the floral arrangement are not allowed.

6. EVENT SCHEDULE

See the CDE Schedule on the website for the specific date, place and start times.

Students shall check in 15 minutes prior to the event start time. Once the event begins, the approximate schedule includes:

- Event Instructions (10 minutes)
- Individual Plant and Equipment ID Challenge (25 minutes)
- Individual General Knowledge Exam (25 minutes)
- Team Activity (45 minutes)

NOTE: Two weeks prior to the state event: Instructors will be notified of specific tools and supplies necessary for completion of the hands on challenges, as well as, any information related to changes in the event, scoring, or room changes will be given.

7. ANNUAL THEME

The Floriculture CDE utilizes annual themes. Modifications may be necessary based on the availability of plant materials and other resources. Changes will be communicated ahead of the event if changes are made, but all efforts will be made to maintain the following.

Team Activity

Floral Arrangement Collection (2018, 2020)

- The chosen arrangement will be decided prior to the state CDE, based on floral availability. Teams who are competing at the state CDE will receive notification from the CDE Superintendent.

Schedule:

- 2018 - Dinner Party Theme: Collections could include centerpiece, head table piece.
- 2019 - Create a Marketing Display for Floricultural Products
- 2020 - Prom Theme; Collections could include corsage, boutonniere, centerpiece.

Individual Activity

- Asexual propagation technique (2018)
 - Individual floral arrangement (2019)
 - Transplanting young plants or plugs (2020)
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8. EVENT FORMAT

The Floriculture CDE consists of both team and individual components.

Team Activity - 40 minute time limit

Floral Arrangement Collection (used in 2018 and 2020) (Appendix 4 & 5)

Teams will be given a customer order and a group of fresh materials to complete the order with. Teams must bring their own tools and construction supplies (i.e. floral tape, wire, & adhesive tape, but, no liquid glue). Contestants will be given the RETAIL price of the fresh materials and any hard goods provided. A pricing worksheet then is to be completed to calculate the cost of the complete order. (Refer to Appendix 4-Blank and Appendix 5-Completed.)

Create a Marketing Display for Floricultural Products (used in 2019) (Appendix 6)

Teams will be given an image of items that need to be marketed in a retail shop and told the season or theme associated with the marketing period. Using poster board and markers, teams will sketch a storyboard illustration of their concept proposal and be given 30 seconds to give their “pitch” to a judging panel.

Individual Activities

Activity 1: Practicum - 20 minute time limit

Asexual propagation technique (2018) (Appendix 9)

Contestants are instructed to the type of asexual plant propagation technique they are to perform using the stock plant and materials provided. Evaluation is employing the appropriate technique, cleanliness and skill in doing so, proper application of hormone treatment, and proper placement of the propagate in the rooting medium.

Floral Arrangement (2019) (Appendix 7)

Each contestant will construct a multiple stem bud vase with filler and bow.

Transplanting young plants or plugs (2020) (Appendix 8)

Rooted cuttings or starter plugs are to be transplanted into a growing container. Contestant is to select healthy plant materials, complete activity with no plant injury, planting at proper depth, use of appropriate potting media, and properly label (plant name, sowing date, transplant date)

Activity 2: Identification of Floriculture Plants, Equipment, & Supplies - Approximately 20 minute time limit

Students will take a timed test using digital images presented on a screen to entire group. 50 specimens @ 20 seconds per image. Live specimens may be used based on availability and event logistics. Contestants will be provided the identification lists from Appendix 1 and Appendix 2 to choose from and identify the slide number next to the appropriate choice. Plants for identification will be listed alphabetically using SCIENTIFIC name first, followed by COMMON name.

Activity 3: General Knowledge Exam - 25 minute time limit

Students will be given a written exam with 50 multiple choice questions evaluating their understanding of life sciences and the various activities within the floriculture industry. Topics may include: plant propagation, culture, commercial production methodology, environmental management, biotic interactions, production management, business management, marketing, sales, postharvest handling, shipping, and floral design theory. Contestants will have a maximum of 25 minutes to complete this activity. (See Resource Materials: Previous CDE exams and Exams with Answers.)

9. SCORING

The following represents how team and individual scores are calculated.

Team Score Calculation **Score**

Total Team Score Calculation

• Team Practicum (see specific practicum scoring below)	200
• Total Individual Scores (4 participants x 500 possible points)	2000
Total Points Possible	2200

Team Practicum (for use in 2018 & 2020) **Score**

Floral Arrangement Collection

• Design(s) appropriateness, construction, design	150
• Presentation/packaging	25
• Pricing	25
Total Points Possible	200

Team Practicum (for use in 2018 & 2020) Score

Floral Arrangement Collection

• Design(s) appropriateness, construction, design	150
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• Presentation/packaging	25
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• Pricing	25
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Total Points Possible	200
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Team Practicum (for use in 2019) Score

Create a Marketing Display for Floriculture Products

• Design appropriateness, theme, comprehension	100
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• Presentation	50
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• Originality	25
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• Showing team effort	25
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Total Points Possible	200
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Individual Score Calculation	Score
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Total Individual Score Calculation	
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<ul style="list-style-type: none"> • Individual Practicum (see specific practicum scoring below) 	100
<ul style="list-style-type: none"> • Identification of Floriculture Plants, Equipment, & Supplies (annually) - 50 images x 4 points each 	200
<ul style="list-style-type: none"> • Individual General Knowledge Exam (annually) - 50 questions x 4 points each 	200
Total	500

Individual Practicum (for use in 2018)	Score
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Practicum - Asexual propagation technique	
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<ul style="list-style-type: none"> • Cutting selection, maturity, size appropriateness 	20
<ul style="list-style-type: none"> • Proper cutting technique employed and prepared 	30
<ul style="list-style-type: none"> • Sticking method 	10
<ul style="list-style-type: none"> • Labeling appropriately 	20
<ul style="list-style-type: none"> • Response to questions 	20
Total Points Possible	100

Individual Practicum (for use in 2019) **Score**

Practicum - Floral Arrangement

- | | |
|------------------------------------|----|
| • Design style and appropriateness | 30 |
| • Construction and mechanics | 50 |
| • Pricing | 20 |
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Total 100

Individual Practicum (for use in 2020) **Score**

Practicum - Transplanting young plants or plugs

- | | |
|---|----|
| • Plant selection and condition following transplant activity | 20 |
| • Proper planting method, depth, location, soil firmness | 40 |
| • Labeling appropriately | 20 |
| • Response to questions | 20 |
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Total 100

10. TIEBREAKER

To determine the award order for individuals involved in a tie, the following will be utilized in rank order:

1. Written Exam Score
2. Plant and Equipment Identification Score
3. Individual Activity Score

To determine the award order for teams that are involved in a tie, the following will be utilized in rank order:

1. Team Activity Score
 2. Written Exam Score
 3. Plant and Equipment Identification Score
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11. RESOURCE MATERIALS

It's recommended that students study from the following materials in preparation for the event:

- The Art of Floral Design 3rd, Ed. (or previous). Norah T. Hunter. Delmar Cengage Learning. ISBN# 978-1418063030
- Introductory Horticulture, 9th Ed. (or previous). Carroll Shry and Edward Reiley. Delmar Cengage Learning. ISBN# 978-1285424729
- Hobby Greenhouse Operations and Practices. J.R. Kessler, Jr. 1999. Alabama A & M. ANR-1153. <http://www.aces.edu/pubs/docs/A/ANR-1153/index2.tmp>
- Fertilizer Injectors: Selection, Maintenance and Calibration. Pennisi and Kessler, 2017. Bulletin 1237. Extension.uga.edu. <http://extension.uga.edu/publications/detail.html?number=B1237>

12. PAST EXAMS

See Appendix 10 and Appendix 11 for sample exams used in previous years.

13. POST-CDE DEBRIEFING OPPORTUNITY

Immediately following event in competition room, the superintendent will present highlights of the competition and give explanation specific to the hands-on activities, expectations, evaluation criteria, and a reflectance on the contestants understanding of the activities.

APPENDIX

Appendix 1. Floriculture Plant Identification List

	SCIENTIFIC NAME	COMMON NAME
101	Aechmea fasciata cv.	<i>Silver Vase Bromeliad</i>
102	Ageratum houstonianum	<i>Ageratum</i>
103	Alstroemeria hybrid cv.	<i>Peruvian Lily</i>
104	Anemone coronaria	<i>Anemone</i>
105	Anethum graveolens cv.	<i>Dill</i>
106	Angelonia hybrid cv.	<i>Angelonia</i>
107	Anthurium x andraeanum cv.	<i>Flamingo Plant</i>
108	Antirrhinum majus cv.	<i>Snapdragon</i>
109	Aphelandra squarrosa cv.	<i>Zebra Plant</i>
110	Araucaria heterophylla	<i>Norfolk Island Pine</i>
111	Asparagus densiflorus	<i>Sprengeri Fern</i>
112	Aster pringlei	<i>Monte Cassino Aster</i>
113	Astilbe hybrid cv.	<i>Astilbe</i>
114	Begonia x semperflorens –cultorum	<i>Wax Begonia</i>
115	Begonia x tuberhybrida cv.	<i>Tuberous Begonia</i>
116	Caladium x hortulanum cv.	<i>Caladium</i>
117	Calibrachoa hybrid cv.	<i>Million Bells</i>
118	Callistephus chinensis cv.	<i>China Aster</i>
119	Campanula hybrid cv.	<i>Campanula</i>

120	Canna x generalis cv.	<i>Garden Canna</i>
121	Capsicum annuum	<i>Ornamental Pepper Plant</i>
122	Catharanthus roseus	<i>Vinca</i>
123	Celosia argentea cv.	<i>Cockscomb</i>
124	Chamaedorea elegans	<i>Parlor Palm</i>
125	Chamelaucium uncinatum	<i>Waxflower</i>
126	Cholorophytum comosum cv.	<i>Spider Plant</i>
127	Chrysanthemum x morifolium	<i>Florist's Chrysanthemum</i>
128	Clematis hybrid cv.	<i>Clematis</i>
129	Codiaeum variegatum pictum	<i>Croton</i>
130	Crassula argentea	<i>Jade Plant</i>
131	Cycas revoluta cv.	<i>Sago Palm</i>
132	Cyclamen x persicum cv.	<i>Florist's Cyclamen</i>
133	Cymbidium cv.	<i>Cymbidium Orchid</i>
134	Cymbopogon cv.	<i>Lemongrass (herb)</i>
135	Dahlia hybrid cv.	<i>Dahlia</i>
136	Delphinium consolida cv.	<i>Larkspur</i>
137	Dendrobium cv.	<i>Dendrobium Orchid</i>
138	Dianthus caryophyllus cv.	<i>Carnation</i>
139	Dracaena cincta	<i>Red Edge Dracaena</i>
140	Echinocactus cv.	<i>Barrel Cactus</i>
141	Epipremnum aureum cv.	<i>Golden Pothos</i>

142	Erica carnea cv.	<i>Spring Heather</i>
143	Eucalyptus polyanthemos	<i>Silver Dollar Eucalyptus</i>
144	Euphorbia pulcherrima cv.	<i>Poinsettia</i>
145	Eustoma grandiflorum	<i>Lisianthus</i>
146	Exacum affine	<i>Persian Violet</i>
147	Ficus benjamina cv	<i>Benjamin Fig</i>
148	Ficus elastica cv	<i>Rubber Plant</i>
149	Fragaria x ananassa cv.	<i>Strawberry Plant</i>
150	Freesia x hybrida	<i>Freesia</i>
151	Gardenia jasminoides	<i>Gardenia</i>
152	Gerbera jamesonii	<i>Gerbera Daisy</i>
153	Gladiolus x hortulanus cv.	<i>Garden Gladiolus</i>
154	Gomphrena hybrid cv.	<i>Globe Amaranths</i>
155	Gypsophila elegans cv.	<i>Baby's Breath</i>
156	Hedera helix cv.	<i>English Ivy</i>
157	Helianthus annuus	<i>Sunflower</i>
158	Hemerocallis cv.	<i>Daylily</i>
159	Hippeastrum hybrid cv.	<i>Amaryllis</i>
160	Hosta cv.	<i>Hosta</i>
161	Hoya carnosa	<i>Wax Plant</i>
162	Hyacinthus orientalis cv.	<i>Hyacinth</i>
163	Hydrangea macrophylla	<i>Big Leaf Hydrangea</i>

164	Impatiens hybrid cv.	<i>Impatiens</i>
165	Impomoea batatas cv.	<i>Ornamental Sweet Potato</i>
166	Iris x xiphium cv.	<i>Dutch Iris</i>
167	Senecio cineraria	<i>Dusty Miller</i>
168	Justica brandegeana	<i>Shrimp Plant</i>
169	Kalanchoe x blossfeldiana cv.	<i>Kalanchoe</i>
170	Leucanthemum x superbum	<i>Shasta Daisy</i>
171	Leucospermum hybrid cv.	<i>Pin Cushion Protea</i>
172	Liatris spicata	<i>Liatris</i>
173	Lilium hybrid cv.	<i>Asiatic or Oriental Lily</i>
174	Limonium sinuatum	<i>Statice</i>
175	Lobularia maritima	<i>Alyssum</i>
176	Maranta leuconeura	<i>Prayer Plant</i>
177	Matthiola incana cv.	<i>Stock</i>
178	Monstera deliciosa	<i>Split Leaf Philodendron</i>
179	Narcissus hybrid cv.	<i>Daffodil or Narcissus</i>
180	Nephrolepis exaltata cv.	<i>Boston Fern</i>
181	Ocimum basilicum cv.	<i>Basil</i>
182	Opuntia cv.	<i>Cactus</i>
183	Paeonia cv.	<i>Peony</i>
184	Paphiopedilum hybrid cv.	<i>Ladyslipper Orchid</i>
185	Pelargonium x hortorum cv.	<i>Zonal Geranium</i>

186	Pelargonium peltatum cv.	<i>Ivy Geranium</i>
187	Pentas hybrid cv.	<i>Pentas</i>
188	Petroselinum crispum cv.	<i>Parsley</i>
189	Petunia x hybrida cv.	<i>Petunia</i>
190	Phalaenopsis cv.	<i>Moth Orchid</i>
191	Philodendron scandens oxycardium	<i>Heartleaf Philodendron</i>
192	Pilea cadierei	<i>Aluminum Plant</i>
193	Portulaca oleracea cv.	<i>Portulaca</i>
194	Primula malacoides cv.	<i>Primrose</i>
195	Ranunculus hybrid cv.	<i>Ranunculus</i>
196	Rhododendron simsii cv.	<i>Florist Azalea</i>
197	Rosa hybrid cv	<i>Hybrid Tea Rose</i>
198	Rumohra adiantiformis	<i>Leatherleaf Fern</i>
199	Saintpaulia ionantha cv.	<i>African Violet</i>
200	Salvia splendens cv.	<i>Salvia</i>
201	Sansevieria trifasciata cv.	<i>Snake Plant</i>
202	Schefflera arboricola	<i>Dwarf Schafflera</i>
203	Schlumbergera bridgesii	<i>Christmas Cactus</i>
204	Sempervivum hybrid cv.	<i>Hens and Chicks</i>
205	Senecio x hybridus cv.	<i>Cineraria</i>
206	Sinningia speciosa Fyfiana Group cv	<i>Florist Gloxinia</i>
207	Solidago hybrid cv	<i>Solidago</i>

208	Solenostemon scutellarioides	<i>Coleus</i>
209	Spathiphyllum	<i>Peace Lily</i>
210	Stephanotis floribunda	<i>Stephanotis</i>
211	Strelitzia reginae	<i>Bird of Paradise</i>
212	Syngonium podophyllum	<i>Nephtytis</i>
213	Tagetes species cv.	<i>Marigold</i>
214	Tradescantia zebrine	<i>Wandering Jew</i>
215	Tulipa cv.	<i>Tulip</i>
216	Verbena hybrid cv.	<i>Verbena</i>
217	Viola x wittrockiana cv.	<i>Pansy</i>
218	Zantedeschia hybrid cv.	<i>Calla Lily</i>
219	Zinnia cv.	<i>Zinnia</i>

Appendix 2. Floriculture Equipment and Supply Identification List

301	#100 Ribbon (satin, sheer, wired)
302	#3 Ribbon (satin, sheer, wired)
303	#40 Ribbon (satin, sheer, wired)
304	#9 Ribbon (satin, sheer, wired)
305	18 Gauge floral wire
306	28 Gauge floral wire
307	Anvil-and-blade pruner
308	Backflow preventer
309	Bouquet sleeve
310	Bulb planter
311	Cardette
312	Cell pack containers
313	Ceramic container
314	Chemical resistant gloves
315	Chenille stem
316	Coconut coir
317	Compressed air sprayer
318	Corsage box
319	Corsage pin
320	Corsage snips
321	Drip emitter, irrigation
322	Dry foam
323	Dust mask

324	Duster
325	Ellepot propagation cubes
326	Enclosure card
327	Fern greening pins
328	Fertilizer injectors
329	Floral adhesive
330	Floral foam
331	Floral knife
332	Floral preservative
333	Floral stem tape
334	Fogger
335	Gas mask
336	Glass vase
337	Glue gun
338	Glue pan
339	Glue sticks
340	Goggles
341	Granular fertilizer
342	Greenhouse thermostat
343	Hanging basket
344	Hearing protection
345	Hook-and-blade pruners (bypass pruners)
346	Hose punch
347	Hose repair coupling
348	Hose-end repair fitting
349	Hose-end sprayer
350	Hose-end washer

351	Impulse sprinkler
352	Irrigation tape
353	Irrigation timer
354	Mist nozzle (mist bed)
355	Nosegay holder
356	Nursery container
357	Oscillating sprinkler
358	Peat moss
359	Peat pots
360	Pest strips
361	pH testing meter
362	Polyethylene film
363	Polyethylene pipe
364	Pot covers
365	Propagation mat
366	Propagation trays
367	PVC (polyvinylchloride) pipe
368	PVC pipe cutter
369	Resin-coated fertilizer
370	Respirator
371	Ribbon shears
372	Rice hulls
373	Rockwool propagation cubes
374	Rose and stem flower stripper
375	Safety goggles
376	Sand
377	Scoop shovel

378	Shade fabric
379	Sharpening stone
380	Sheet moss
381	Siphon injector
382	Soil moisture meter
383	Solenoid valve
384	Spaghetti tubing (1/4" diameter or less)
385	Spanish moss
386	Sphagnum moss
387	Spray suit
388	Square point (flat) shovel
389	Styrofoam
390	Surestik cling
391	Tulle
392	Vermiculite
393	Water breaker
394	Water picks
395	Water soluble fertilizer
396	Water tubes
397	Waterproof container tape
398	Wire cutter
399	Wooden pick
400	Wrist corsage holder

Appendix 3. Plant Disorders, Causal Agents, and Control Methods

CLASSIFICATION

100 Diseases

101 Insects/ Pests / Mites

102 Nutritional/ Environmental

IDENTIFICATION:

200 Aphids

201 Black Leaf Spot

202 Botrytis – Grey Mold

203 Cold Temperature (freeze)

204 Cold Water Damage

205 Damping-off

206 Downy Mildew

207 Ethylene Damage

208 Fungus Gnats

209 Insufficient Watering

210 Iron Deficiency

211 Leaf Miner

212 Leafhopper

213 Mealybugs

214 Nitrogen Deficiency

215 Phosphorus Deficiency

216 Powdery Mildew

217 Root Rot

- 218 Rust**
- 219 Scale**
- 220 Shore Flies**
- 221 Snails/ Slugs**
- 222 Spider Mites**
- 223 Stem Rot**
- 224 Thrips**
- 225 Tospovirus (INSV and TSWV)**
- 226 Whiteflies**

CONTROLS:

Chemical:

- 400 Fungicide**
- 401 Insecticide**
- 402 Miticide**
- 403 Molluscicide**
- 404 No Treatment Listed**

Cultural Control:

- 500 Apply Complete Fertilizer**
- 501 Correct/ Adjust Temperature**
- 502 Correct/ Adjust Watering**
- 503 Ladybird Beetles**
- 504 Nematodes**
- 505 Parasitic Wasps**
- 506 Predatory Mites**
- 507 Reduce Relative Humidity**
- 508 No Treatment Listed**

Appendix 4. Team Activity 2018 & 2020

Blank Sample Pricing Worksheet

Floral Arrangement Itemized List of Costs

Name			Member Number
Chapter			Team Number

Quantity	Flower/Foliage	Unit Cost	Total
Total Flower/Foliage Material Cost			

Quantity	Material Used	Unit Cost	Total
Total Hard Goods Cost			

Total Plant Material Cost	
Total Hard Goods Cost	
Packaging/Wrap Cost	
Total Arrangement Cost*	
Rounded Retail Value**	

*** Participants will be provided the retail price of flowers and foliage that they will use in their arrangement by the event official at the beginning of the practicum. The markup is built into the retail price of the flowers and the foliage used in the arrangement.**

****This is speculative and will not count against the participant unless the number shown is less than the Total Arrangement Cost.**

Appendix 5. Team Activity 2018 & 2020

Completed Sample Pricing Worksheet

Floral Arrangement Itemized List of Costs

Name			Member Number
Jenny Gomez			2289
Chapter			Team Number
Scranton			41

Quantity	Flower/Foliage	Unit Cost	Total
3	Carnation	1.50	4.50
5	Leatherleaf Fern	.25	1.25
1	Gypsophila	1.10	1.10
Total Flower/Foliage Material Cost			6.85

Quantity	Material Used	Unit Cost	Total
1	Multiple stem bud vase	4.50	4.50
3/ft	# 3 wired ribbon	.50/ft	1.50
3	Diamond wire	.75	2.25
Total Hard Goods Cost			8.25

Total Plant Material Cost	6.85
Total Hard Goods Cost	8.25
Container Cost	No wrap
Total Arrangement Cost*	15.10
Rounded Retail Value **	<i>What price do you think it should sell for at your shop (the "perceived value")?</i> 16.50

*** Participants will be provided the retail price of flowers and foliage that they will use in their arrangement by the event official at the beginning of the practicum. The markup is built into the retail price of the flowers and the foliage used in the arrangement.**

****This is speculative and will not count against the participant unless the number shown is less than the Total Arrangement Cost.**

Appendix 6. Team Activity 2019

Marketing Display Practicum Rubric

Team Members:				
Chapter				Team Number

	Excellent	Good	Needs Improvement	Score
Identified and appeal to target group	20	10	5	
Informed the consumer	20	10	5	
Creativity	40	25	5	
Easy to read or view	20	15	10	
Presented one idea	40	20	10	
Contained essential information	20	10	5	

Grammar, spelling, accuracy	20	15	10	
Proper use of space and format	20	15	10	
Total Score: 200				

Judge's Name		Judge's Signature		Date
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Appendix 7. Individual Activity 2019

Multiple Flower Bud Vase Practicum Rubric

100 points

Name			Member Number
Chapter	state	Team Number	

Scoring	Excellent	Good	Needs Improvement	Member Score
Arrangement 80				
Mechanics- No broken materials, cleaned flowers, stems in water, clean cuts, materials supported	50	35	20	
Bow Quality- Holds together, no creases, fraying, visually appealing	10	7	4	
Visual Appeal- does is look great?	20	14	7	
Itemized List of Costs 20				
Price Range	5	2	0	

Identification and Accuracy	15	10	5	
Total Possible:	100			

Judge's Name		Judge's Signature		Date
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Appendix 8. Individual Activity 2019

Potting of Young Plants Practicum Rubric

100 points

NAME

MEMBER NUMBER

CHAPTER

STATE

TEAM NUMBER

	Excellent	Good	Needs Improvement	Member Score
Potting Process				
Selection of plugs or liners	10 points	7 points	0-5 points	
Proper planting depth	10 points	7 points	0-5 points	
Labeling of plant/pot	10 points	7 points	0-5 points	
Correct growing medium level in pot	10 points	7 points	0-5 points	
Plug or liner arrangement and angle	20 points	14 points	0-10 points	
Firmness of growing medium	10 points	7 points	0-5 points	
General appearance (free from handling damage)	10 points	7 points	0-5 points	
Response to questions	20 points	14 points	0-10 points	
			TOTAL POSSIBLE:	100

JUDGE'S NAME

JUDGE'S SIGNATURE

DATE

Appendix 9. Individual Activity 2018

Asexual Plant Propagation Rubric

100 points

NAME

MEMBER NUMBER

CHAPTER

STATE

TEAM NUMBER

	Excellent	Good	Needs Improvement	Member Score
Selection of cuttings	10 points	7 points	0-5 points	
Making cuttings	20 points	14 points	0-10 points	
Preparation of cuttings for sticking in growing media	10 points	7 points	0-5 points	
Sticking of cuttings in growing media	20 points	14 points	0-10 points	
Cuttings labeled correctly	20 points	14 points	0-10 points	
Response to questions	20 points	14 points	0-10 points	

Comments:

TOTAL SCORE: 100

JUDGE'S NAME

JUDGE'S SIGNATURE

DATE

Appendix 10. Written Exam Sample 1

SELECT MOST APPROPRIATE ANSWER AND IDENTIFY CHOICE ON ANSWER SHEET

1. Scientific names are used to;
 - a. avoid confusion concerning the names of plants
 - b. increase the possible number of plant names
 - c. show the chemical makeup of plants
 - d. elevate the professionalism of the industry
2. The name of the person who developed the binomial system for naming plants is;
 - a. Plato
 - b. Socrates
 - c. Hortus
 - d. Linnaeus
3. Plant *genus* can be defined as;
 - a. a group of plants that are all alike
 - b. a group of plants having the exact flower type
 - c. a group of plants having more characteristics in common than any other group of plants
 - d. a group of plants having the same genetic information
4. In the plant scientific name, *Plectranthus x hybrida*, 'Mona Lisa', the name 'Mona Lisa' is the name given for the _____.
 - a. cultivar
 - b. genus
 - c. species
 - d. family
5. The four basic parts of a plant are the:
 - a. flowers, pollen, fruit, leaves
 - b. sepal, pistil, stamen and ovary
 - c. leaves, stems, roots and flowers
 - d. none of the above

6. The stems of dicots have xylem and phloem that are:

- a. on each side of a concentric cambium layer
- b. in small bundles scattered through the stem
- c. side by side in the center of the stem
- d. outside of the outer epidermis of the stem

7. The green color exhibited by plant leaves is caused by tiny particles in the food-producing cells called;

- a. epidermis
- b. starch
- c. guard cells
- d. chloroplasts

8. The four main parts of a flower include;

- a. sepal, pistil, ovary, stigma
- b. sepal, petal, pistil, stamen
- c. stamen, pollen, ovary, pedicel
- d. color, fragrance, shape, length

9. Flower fertilization is;

- a. the transfer of pollen from the anther to the stigma
- b. the meeting of the male and female gametes in the ovary
- c. the process of removing the anthers from flowers
- d. use of floral preservatives in the vase water

10. An example of a plant having an underground specialized stem that is able to store energy and is used to propagate the plant is;

- a. Caladium
- b. Dahlia
- c. Chrysanthemum
- d. Weeping fig

11. Formulated potting media is used when growing plants in containers because;

- a. it is sterile, uniform, has good drainage and water holding content
- b. good topsoil is hard to find

- c. large amounts of minerals and pathogens provide for an optimum rooting environment
- d. provide for the greatest bulk density and naturally occurring biologicals for optimal growth

12. To lower soil pH and increase potting media acidity;

- a. a complete fertilizer is added
- b. dolomitic lime is added
- c. aluminum sulfate is added
- d. boron is added

13. Plants can be made to grow taller by applying the chemical;

- a. NAA
- b. GA
- c. ethylene
- d. zinc

14. Rooting hormones are often used to promote rooting, typically _____ is used.

- a. cytokinens
- b. abcissic acid
- c. gibberellins
- d. auxin

15. To prevent plant roots from being infected by detrimental pathogens in the growing medium, _____ are commonly used.

- a. fungicide
- b. bacterialcide
- c. insecticide
- d. nematicide

16. Biostimulants affect plants by;

- a. increasing the number of fibrous roots for greater water/nutrient uptake and plant growth
- b. preventing excessive plant growth by suppressing excessive photosynthesis
- c. creating a quick growth response through increased fertility
- d. enhancing xylem function for improved photsynthate movement throughout the plant

17. The tops of "bulb" plants, such as tulip or lily, should be allowed to continue growing until they die naturally because;

- a. they add beauty to the garden
- b. they continue to manufacture food for storage in the bulb
- c. they grow larger and will flower again
- d. they shade the bulbs to keep them cool

18. A "stolon" is a specialized;

- a. leaf
- b. root
- c. stem
- d. fruit

19. A plant that has a "rhizome" and is typically propagated through division;

- a. tulip
- b. gladiolus
- c. lily
- d. iris

20. Seeds are composed of the;

- a. root, starch, and seed coat
- b. embryonic plant, endosperm, seed coat
- c. starch, apical bud, and seed coat
- d. rhizome, stem, shoot, and seed coat

21. The first part of a plant to emerge from a seed is the;

- a. root
- b. stem
- c. leaves
- d. cotyledon

22. Growers that use direct seeding, are those that are;

- a. sown by a mechanical transplanter
- b. put into seedling trays before shifting into final pots
- c. sown in the container that they will be grown to their final saleable size in
- d. allowing seeds to fall from the parent plant onto the soil surface.

23. Plants grown in the greenhouse must be _____ before moving

permanently to the patio or garden outdoors in an effort to reduce injury or transplant shock.

- a. watered well
- b. fertilized
- c. **hardened-off**
- d. pasteurized

24. The use of "cuttings" to start new plants, is called _____ propagation.

- a. sexual
- b. **asexual**
- c. lineage
- d. transplant

25. Identify the cutting type for the method of propagation illustrated in figure a.

- a. Leaf
- b. Stem-section
- c. Leaf-bud
- d. **Leaf-petiole**

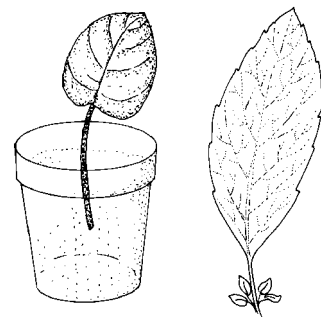


Figure a.

26. Pinching poinsettias is a process of removing;

- a. flower buds
- b. **terminal tips**
- c. bracts
- d. leaves

27. The principle reason for pinching poinsettias, as well as any other type of plant, is to;

- a. decrease the number of flowers per stem
- b. increase the size of the flowers on each stem
- c. **increase fullness and the number of flowers on the plant**
- d. remove pests and diseases

28. A common problem associated with poinsettia production that can happen if the potting soil remains too wet and the greenhouse conditions are cool and moist, is;

- a. root rot
- b. whitefly

- c. spidermites
- d. powdery mildew

29. Easter lily, poinsettia, hibiscus or geranium may require the use of growth regulators when greenhouse temperatures are not well controlled. What is the growth regulator for?

- a. initiate more flower production
- b. slow stem growth for a compact plant
- c. lengthen the stems to achieve optimum visual appeal
- d. shorten the flowering time

30. The use of living natural organisms or material for control of plant pests is;

- a. not typically practiced due to poor success in the greenhouse
- b. best coordinated with the use of formulated chemicals for difficult pests
- c. a common practice called biological control
- d. newly innovated, termed CPM (comprehensive pest management)

31. Fungus diseases are spread by small seed-like structures called;

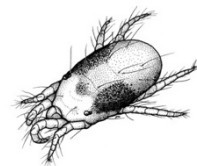
- a. roots
- b. pollen
- c. nematodes
- d. spores

32. Contact pesticides are not completely effective because;

- a. insects are often hidden in the flowers or under leaves avoiding the application
- b. insects must feed on the plant tissue to be controlled
- c. the pesticide is only effective when wet
- d. these pesticides are the lowest in toxicity of all available types

33. Under a hand lens, you note the pest shown in figure b. Identify the best chemical control.

- a. nematicide



- b. insecticide
- c. bactericide
- d. miticide

Figure b.

34. Select the most appropriate "line" flower to use in an arrangement.

- a. delphinium
- b. aster
- c. babybreath
- d. statice

35. The basic principle of design that creates interest within a floral arrangement is the;

- a. balance
- b. focal point
- c. scale
- d. harmony

36. The type of balance required of all designs includes;

- a. symmetrical and asymmetrical
- b. visual and physical
- c. harmony and rhythm
- d. none of the above

37. Florist tape is used to;

- a. hold together damaged flowers
- b. support flowers within the vase
- c. cover exposed florist wire/mechanics
- d. prevent movement of floral arrangements in delivery

38. A flower arrangement color scheme using a single hue, in its various value or shades, is called;

- a. monochromatic
- b. analogous
- c. primary
- d. complementary

39. Costs associated with making an arrangement, decorating a blooming plant or creating wedding flower arrangements, are called;

- a. fixed costs
- b. overhead

- c. direct costs
- d. indirect costs

40. A successful business includes:

- a. proficient employees; an efficient process; quality product
- b. inexpensive labor; dedicated owner; a clear product vision
- c. strict customer service; select customer base; high value product
- d. efficient employees; limited inventory; inexpensive supplies; low overhead

Appendix 11. Written Exam Sample 2

SELECT MOST APPROPRIATE ANSWER AND IDENTIFY CHOICE ON ANSWER SHEET

1. The science and practice of growing and harvesting flowering plants is called:

- a. ornamental and landscape horticulture
- b. olericulture
- c. pomology
- d. floriculture

2. Scientific names of plants are expressed in Latin because:

- a. it is a dead language
- b. it is easy for all nationalities to pronounce
- c. it is an international language used in dialog
- d. it is an easy language to learn

3. A plant *species* can be defined as:

- a. a group of plants that have same characteristics and consistently produce like plants
- b. a group of plants that have more in common than with plants of any other group
- c. plants that are the same size
- d. plants having the same color

4. The four basic parts of a plant are the:

- a. leaves, stems, roots and flowers
- b. flowers, pollen, fruit, leaves
- c. sepal, pistil, stamen and ovary
- d. none of the above

5. The stems of monocots have xylem and phloem that are:

- a. on each side of a cambium layer
- b. in small bundles scattered through the stem
- c. side by side organized concentrically
- d. near the outer epidermis of the stem

6. The xylem of a plant stem:

- a. conducts manufactured food down the stem
- b. stores food
- c. is the green color visibly seen to the eye
- d. conducts water and nutrients upward in the plant

7. Green plants are able to manufacture food only in the presence of:

- a. light
- b. carbon dioxide
- c. water
- d. all of these

8. The advantages of a good artificial medium are:

- a. it is sterile and uniform in content
- b. it is lighter in weight and easier for handling
- c. it has good drainage and moisture holding capacity
- d. all of these reasons

9. Phosphorous as a nutrient, causes plants to:

- a. produce more flowers and seeds
- b. resist diseases
- c. develop strong roots
- d. all of these

10. To raise the pH and lower acidity of a potting medium,

- a. urea is added to the medium
- b. lime is added to the medium
- c. a balanced fertilizer should be used
- d. none of these

11. Transpiration of plants is the process of:

- a. water loss through leaf stomata
- b. water loss through leaf epidermis
- c. the movement of photosynthates (sugars) through the stem
- d. the manufacture of photosynthates from capturing the sun's energy

12. Plant height may be increased by using the chemical;

- a. naphthaleneacetic acid
- b. gibberellic acid
- c. ethylene
- d. indoleacetic acid

13. The chemical most often used commercially for rooting of plant cuttings is:

- a. indoleacetic acid
- b. indolebutyric acid
- c. naphthaleneacetic acid
- d. gibberellic acid

14. Many horticultural crops are started from seed because:

- a. there are very few people who know how to do it otherwise
- b. it is not possible to propagate plants any other way
- c. it is typically quick and economical
- d. both b and c are correct

15. The seeding date for starting flowering plants is important because:

- a. there must be greenhouse space available at the time
- b. seed wholesalers only have seeds at specific times of the year
- c. the seeding medium must be ordered or mixed first
- d. the plants must be ready for sales or outdoor planting at a certain time

16. Seedlings are transplanted by holding the plants first true leaves because;

- a. there are no cotyledons to grasp
- b. the stems are too slick to hold and the seedling may be lost
- c. the stem may easily be bruised, crushed or broken, resulting in death
- d. this bruises the leaves ensuring of rapid growth response post transplant

17. Potted ornamental plants, like Amaryllis, can be forced into dormancy by withholding;

- a. fertilizer
- b. light
- c. water
- d. warmth

18. An example of a plant that has a rhizome for a true stem is;

- a. tulip
- b. potato
- c. gladiolus
- d. iris

19. A poinsettia flower is;

- a. large red leaves at the terminal end of a stem
- b. large yellow bloom at the terminal end of a stem
- c. small yellow blooms or cyathia at the terminal end of a stem
- d. indiscrete white blooms at leaf nodes

20. The major reason poinsettia stems are pinched is;

- a. increases the number of flowers per stem
- b. increases the number of flowering stems
- c. decreases the number of flowers per stem
- d. the propagation of more plants asexually

21. Chrysanthemum plants require shortened day lengths to initiate flowering, this is called;

- a. photoperiodic response
- b. dimorphic programming
- c. Floramorphic response
- d. seasonal programming

22. Uneven bud set on a chrysanthemum plant is typically the result of;

- a. improper lighting
- b. improper temperature control
- c. crowding of plants
- d. insect damage

23. The most common disease associated with forced bulb plants, like lilies or tulips, is;

- a. root rot
- b. leaf rust
- c. aphids
- d. grubs

24. A biological pesticide used for the control of many different insects is;

- a. neem oil
- b. onion oil
- c. malathion
- d. naphthaleneacetic acid

25. Systemic insecticides are most effective in killing insects that feed by;

- a. sucking
- b. chewing
- c. at night
- d. none of these

26. When spraying plants with a pesticide, growth regulator or foliar fertilizer, the application should be made;

- a. until the leaves glow
- b. just to the point of drip from the leaves
- c. until the leaves discolor
- d. using 3 times the labeled rate

27. Before applying a chemical to control a pest, the grower must;

- a. read the label
- b. accurately identify by the pest
- c. use a safe product
- d. all of these

28. Container plants within the home tend to grow towards light sources because;

- a. of photosynthesis
- b. transpiration is occurring
- c. of phototropism
- d. of thigmotropism

29. A musty odor in a terrarium or fairy garden planter can be resolved by;

- a. adding granite pebbles
- b. increasing peat moss in the medium
- c. adding mineral soil
- d. using activated charcoal

30. A bonsai plant must be repotted every 1 to 3 years to;

- a. to encourage new rooting
- b. to improve soil fertility
- c. allow for root pruning
- d. all of these

31. Humidity around indoor plants can be improved by;

- a. turning up the heating in the home
- b. using a plant light close to the plants
- c. grouping the plants and setting upon a gravel tray
- d. all of these

32. Single faced ribbon has;

- a. a shiny side and a dull side
- b. wire on the ribbon edges
- c. is dull on both sides
- d. no decorative printing

33. Which of the following is considered a "line flower";

- a. snapdragon
- b. rose
- c. baby's breath
- d. goldenrod

34. An accent in a floral design;

- a. creates an area of interest
- b. builds balance in the arrangement
- c. harmonizes the color
- d. should be twice the width of the arrangement

35. Florist tape is used to;

- a. hold a gift card to the arrangement
- b. repair damaged blooms so they can be used
- c. fasten flowers together or hide the mechanics of a design
- d. hold the flowers into the vase

36. Costs associated with making an arrangement, decorating a blooming plant or creating wedding flower arrangements, are called;

- a. fixed costs
- b. overhead
- c. direct costs
- d. indirect costs

37. The most popular mechanics item used for supporting floral arrangements is called;

- a. floral tape
- b. plastic grid

c. waterproof tape

d. floral foam

38. The most important factor(s) of your success in the sales of floricultural products is/are;

a. determination of the best products and services to be featured

b. product knowledge, individual personality and sales skills

c. the state of the economy

d. the weather

39. The objective of a market analysis in developing a business is to;

a. make a sales presentation

b. develop a marketing plan

c. create a new product

d. determine the cost to sell a product

40. A successful business includes:

a. quality employees, efficient process, quality/desirable product

b. inexpensive labor, dedicated owner, product vision

c. strict customer service, select customer base, high value product

d. an angel investor