Agriculture, Food & Natural Resources Career Cluster
Floriculture Production and Management
Course Number: 01.46200

Course Description:
This course is designed to introduce students to the principles and practices of floriculture production. Students will develop floriculture skills and the basic understanding necessary to be successful in entry-level positions in the floriculture industry. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities.

Course Standard 1
AFNR-FPM-1
The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.
The following elements should be integrated throughout the content of this course.

<table>
<thead>
<tr>
<th>Person-to-Person Etiquette</th>
<th>Telephone and Email Etiquette</th>
<th>Cell Phone and Internet Etiquette</th>
<th>Communicating At Work</th>
<th>Listening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interacting with Your Boss</td>
<td>Telephone Conversations</td>
<td>Using Blogs</td>
<td>Improving Communication Skills</td>
<td>Reasons, Benefits, and Barriers</td>
</tr>
<tr>
<td>Interacting with Subordinates</td>
<td>Barriers to Phone conversations</td>
<td>Using Social Media</td>
<td>Effective Oral Communication</td>
<td>Listening Strategies</td>
</tr>
<tr>
<td>Interacting with Co-workers</td>
<td>Making and Returning Calls</td>
<td></td>
<td>Effective Written Communication</td>
<td>Ways We Filter What We Hear</td>
</tr>
<tr>
<td>Interacting with Suppliers</td>
<td>Making Cold Calls</td>
<td></td>
<td>Effective Nonverbal Skills</td>
<td>Developing a Listening Attitude</td>
</tr>
<tr>
<td></td>
<td>Handling Conference Calls</td>
<td></td>
<td>Effective Word Use</td>
<td>Show You Are Listening</td>
</tr>
<tr>
<td></td>
<td>Handling Unsolicited Calls</td>
<td></td>
<td>Giving and Receiving Feedback</td>
<td>Asking Questions</td>
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<td>Obtaining Feedback</td>
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<td>Getting Others to Listen</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Nonverbal Communication</th>
<th>Written Communication</th>
<th>Speaking</th>
<th>Applications and Effective Résumés</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating Nonverbally</td>
<td>Writing Documents</td>
<td>Using Language Carefully</td>
<td>Completing a Job Application</td>
</tr>
<tr>
<td>Reading Body Language and mixed Messages</td>
<td>Constructive Criticism in Writing</td>
<td>One-on-One Conversations</td>
<td>Writing a Cover Letter</td>
</tr>
<tr>
<td>Matching Verbal and Nonverbal communication</td>
<td>Small Group Communication</td>
<td>Things to Include in a Résumé</td>
<td></td>
</tr>
<tr>
<td>Improving Nonverbal Indicators</td>
<td>Large Group Communication</td>
<td>Selling Yourself in a Résumé</td>
<td></td>
</tr>
<tr>
<td>Nonverbal Feedback</td>
<td>Making Speeches</td>
<td>Terms to Use in a Résumé</td>
<td></td>
</tr>
</tbody>
</table>
1.2 **Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.**

<table>
<thead>
<tr>
<th>Teamwork and Problem Solving</th>
<th>Meeting Etiquette</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking Creatively</td>
<td>Preparation and Participation in Meetings</td>
</tr>
<tr>
<td>Taking Risks</td>
<td>Conducting Two-Person or Large Group Meetings</td>
</tr>
<tr>
<td>Building Team Communication</td>
<td>Inviting and Introducing Speakers</td>
</tr>
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<td></td>
<td>Facilitating Discussions and Closing</td>
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<td>Preparing Visual Aids</td>
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<td>Virtual Meetings</td>
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</tbody>
</table>

1.3 **Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.**

<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>Customer Service</th>
<th>The Application Process</th>
<th>Interviewing Skills</th>
<th>Finding the Right Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferable Job Skills</td>
<td>Gaining Trust and Interacting with Customers</td>
<td>Providing Information, Accuracy and Double Checking</td>
<td>Preparing for an Interview</td>
<td>Locating Jobs and Networking</td>
</tr>
<tr>
<td>Becoming a Problem Solver</td>
<td>Learning and Giving Customers What They Want</td>
<td>Online Application Process</td>
<td>Questions to Ask in an Interview</td>
<td>Job Shopping Online</td>
</tr>
<tr>
<td>Identifying a Problem</td>
<td>Keeping Customers Coming Back</td>
<td>Following Up After Submitting an Application</td>
<td>Things to Include in a Career Portfolio</td>
<td>Job Search Websites</td>
</tr>
<tr>
<td>Becoming a Critical Thinker</td>
<td>Seeing the Customer’s Point</td>
<td>Effective Résumés:</td>
<td>Traits Employers are Seeking</td>
<td>Participation in Job Fairs</td>
</tr>
<tr>
<td>Managing</td>
<td>Selling Yourself and the Company</td>
<td>Matching Your Talents to a Job</td>
<td>Considerations Before Taking a Job</td>
<td>Searching the Classified Ads</td>
</tr>
<tr>
<td>Handling Customer Complaints</td>
<td>When a Résumé Should be Used</td>
<td></td>
<td></td>
<td>Using Employment Agencies</td>
</tr>
<tr>
<td>Strategies for Customer Service</td>
<td></td>
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<td>Landing an Internship</td>
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<td>Staying Motivated to Search</td>
</tr>
</tbody>
</table>

1.4 **Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.**

<table>
<thead>
<tr>
<th>Workplace Ethics</th>
<th>Personal Characteristics</th>
<th>Employer Expectations</th>
<th>Business Etiquette</th>
<th>Communicating at Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating Good Work Ethic</td>
<td>Demonstrating a Good Attitude</td>
<td>Behaviors Employers Expect</td>
<td>Language and Behavior</td>
<td>Handling Anger</td>
</tr>
<tr>
<td>Behaving Appropriately</td>
<td>Gaining and Showing Respect</td>
<td>Objectionable Behaviors</td>
<td>Keeping Information Confidential</td>
<td>Dealing with Difficult Coworkers</td>
</tr>
<tr>
<td>Maintaining Honesty</td>
<td>Demonstrating Responsibility</td>
<td>Establishing Credibility</td>
<td>Avoiding Gossip</td>
<td>Dealing with a Difficult Boss</td>
</tr>
<tr>
<td>Playing Fair</td>
<td>Showing Dependability</td>
<td>Demonstrating Your Skills</td>
<td>Appropriate Work Email</td>
<td>Dealing with Difficult Customers</td>
</tr>
<tr>
<td>Using Ethical Language</td>
<td>Being Courteous</td>
<td>Building Work Relationships</td>
<td>Cell Phone Etiquette</td>
<td>Dealing with Conflict</td>
</tr>
</tbody>
</table>
1.5  **Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.**

<table>
<thead>
<tr>
<th>Expected Work Traits</th>
<th>Teamwork</th>
<th>Time Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating Responsibility</td>
<td>Teamwork Skills</td>
<td>Managing Time</td>
</tr>
<tr>
<td>Dealing with Information Overload</td>
<td>Reasons Companies Use Teams</td>
<td>Putting First Things First</td>
</tr>
<tr>
<td>Transferable Job Skills</td>
<td>Decisions Teams Make</td>
<td>Juggling Many Priorities</td>
</tr>
<tr>
<td>Managing Change</td>
<td>Team Responsibilities</td>
<td>Overcoming Procrastination</td>
</tr>
<tr>
<td>Adopting a New Technology</td>
<td>Problems That Affect Teams</td>
<td>Organizing Workspace and Tasks</td>
</tr>
<tr>
<td></td>
<td>Expressing Yourself on a Team</td>
<td>Staying Organized</td>
</tr>
<tr>
<td></td>
<td>Giving and Receiving Constructive Criticism</td>
<td>Finding More Time</td>
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<td></td>
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<td>Managing Projects</td>
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<td>Prioritizing Personal and Work Life</td>
</tr>
</tbody>
</table>

1.6  **Present a professional image through appearance, behavior and language.**

<table>
<thead>
<tr>
<th>On-the-Job Etiquette</th>
<th>Person-to-Person Etiquette</th>
<th>Communication Etiquette</th>
<th>Presenting Yourself</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Professional Manners</td>
<td>Meeting Business Acquaintances</td>
<td>Creating a Good Impression</td>
<td>Looking Professional</td>
</tr>
<tr>
<td>Introducing People</td>
<td>Meeting People for the First Time</td>
<td>Keeping Phone Calls Professional</td>
<td>Dressing for Success</td>
</tr>
<tr>
<td>Appropriate Dress</td>
<td>Showing Politeness</td>
<td>Proper Use of Work Email</td>
<td>Showing a Professional Attitude</td>
</tr>
<tr>
<td>Business Meal Functions</td>
<td>Proper Use of Cell Phone</td>
<td></td>
<td>Using Good Posture</td>
</tr>
<tr>
<td>Behavior at Work Parties</td>
<td>Proper Use in Texting</td>
<td></td>
<td>Presenting Yourself to Associates</td>
</tr>
<tr>
<td>Behavior at Conventions</td>
<td></td>
<td></td>
<td>Accepting Criticism</td>
</tr>
<tr>
<td>International Etiquette</td>
<td></td>
<td></td>
<td>Demonstrating Leadership</td>
</tr>
<tr>
<td>Cross-Cultural Etiquette</td>
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<tr>
<td>Working in a Cubicle</td>
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</tbody>
</table>

**Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:**

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.
### Course Standard 2

**AFNR-FPM-2**  
Explore, develop, and implement the comprehensive program of agricultural education, learn and demonstrate safe working habits in the agriculture lab and work sites, demonstrate selected competencies in leadership through the FFA and agricultural industry organizations, and develop plans for a Supervised Agricultural Experience Program (SAEP).  
2.1 Explain the role of the Agricultural Education program and the FFA in personal development.  
2.2 Demonstrate knowledge learned through a SAEP.  
2.3 Develop leadership and personal development skills through participation in the FFA.  
2.4 Explore career opportunities in horticulture/plant science through the FFA and Agricultural Education Program.  
2.5 Explore the professional agricultural organizations associated with the course content.

### Course Standard 3

**AFNR-FPM-3**  
Analyze the floriculture industry and discuss the basics of floriculture science, production, and distribution.  
3.1 Describe the scope and importance of the floriculture industry.  
3.2 List and describe careers in floriculture.

### Course Standard 4

**AFNR-FPM-4**  
Identify and explain the functions of floriculture plant structures.  
4.1 Identify and explain the functions of the primary parts of a plant.  
4.2 Label parts of monocot and dicot vascular systems.  
4.3 Analyze the functions of different types of root systems.  
4.4 Compare and contrast complete and incomplete flowers.

### Course Standard 5

**AFNR-FPM-5**  
Discuss how plants grow and describe factors that affect plant growth.  
5.1 Describe the processes of photosynthesis and factors that affect photosynthesis in plants.  
5.2 Describe the processes of respiration and factors that affect respiration in plants.  
5.3 Identify cultural and environmental factors that affect plant growth.  
5.4 Define photoperiodism and experiment with factors that affect the process.  
5.5 Identify the purpose and use of growth regulators.  
5.6 Demonstrate methods for controlling plant growth.

### Course Standard 6

**AFNR-FPM-6**  
Explain the purpose of scientific nomenclature for plants.  
6.1 Distinguish between genus, species, cultivar, and common names for plants.  
6.2 Define common taxonomic terms.  
6.3 Identify common floriculture plants by common and scientific names.  
6.4 Demonstrate the use of a plant key.
Course Standard 7
AFNR-FPM-7
Evaluate the factors that should be considered in the planning and construction of a home or commercial greenhouse.

- 7.1 Identify optimal greenhouse locations.
- 7.2 Calculate greenhouse space requirements.
- 7.3 Explain the types of greenhouse structures.
- 7.4 Compare and contrast various greenhouse coverings.
- 7.5 Describe the characteristics of materials used to frame a greenhouse.
- 7.6 Diagram commonly used greenhouse layouts and bench arrangement.

Course Standard 8
AFNR-FPM-8
Determine cause and effect of environmental control systems in a greenhouse.

- 8.1 Identify the types and uses of irrigation systems.
- 8.2 Prescribe proper irrigation specifications for greenhouse crops.
- 8.3 Analyze the problems associated with poor soil drainage and salt build-up.
- 8.4 Describe proper greenhouse temperature control and the importance to plant health.
- 8.5 Identify areas in the greenhouse prone to heat loss.
- 8.6 Compare and contrast heating sources for greenhouse crops.
- 8.7 Describe the importance and identify the methods of greenhouse ventilation.
- 8.8 Compare the methods of shading greenhouses.

Course Standard 9
AFNR-FPM-9
Investigate the different types of floriculture growing media and determine the appropriate use for various growing situations.

- 9.1 Compare and contrast the various types and components of floriculture crop growth media.
- 9.2 Identify the uses of various media in the industry.
- 9.3 Calculate growing media requirements and formulations for floriculture crop production.

Course Standard 10
AFNR-FPM-10
Discuss the selection of floriculture containers.

- 10.1 Identify the most common materials and container types used in floriculture.
- 10.2 Select suitable containers for selected crop and growing media.
- 10.3 Identify marketing characteristics of containers and the influence on floriculture plant sales.
- 10.4 Calculate container needs and costs for floriculture crops.

Course Standard 11
AFNR-FPM-11
Describe sexual plant reproduction.

- 11.1 Identify biological components and functions of a seed.
- 11.2 Demonstrate the steps in germination.
- 11.3 Identify methods of seeding in floriculture.
- 11.4 Demonstrate scarification and stratification techniques.
- 11.5 Demonstrate transplanting methods and seedling care.
- 11.6 Demonstrate proper handling, storage and care of seed.
Course Standard 12

AFNR-FPM-12
Describe asexual plant propagation.
12.1 Compare and contrast the various methods of asexual plant propagation.
12.2 Identify factors that affect the selection of which asexual propagation method is best used (economic feasibility, skill level, time).
12.3 Demonstrate methods of asexual propagation for greenhouse crops (e.g., cuttings, division, separation, and layering).

Course Standard 13

AFNR-FPM-13
Evaluate and discuss the nutritional needs of plants.
13.1 Identify and categorize the essential elements needed for plant health.
13.2 Evaluate the availability of nutrients in floriculture plant growing media.
13.3 Define soil pH and discuss methods to adjust pH levels in growing media.

Course Standard 14

AFNR-FPM-14
Investigate the use of basic chemicals and evaluate application practices in floriculture.
14.1 Explain the importance of chemical safety.
14.2 Demonstrate safe chemical practices and the use of personal protective equipment in chemical application.
14.3 Compare and contrast chemical control to alternative treatments in floriculture production.
14.4 Interpret a MSDS (Material Safety Data Sheet) for floriculture chemicals.
14.5 Calculate and demonstrate how to mix chemicals for application to floriculture crops.

Course Standard 15

AFNR-FPM-15
Analyze the use of fertilizers for floriculture crops.
15.1 Compare and contrast forms of fertilizers.
15.2 Demonstrate proper fertilizer mixing methods.
15.3 Demonstrate application methods for fertilizers to plants.
15.4 Select and prescribe appropriate fertilizers for floriculture crops.
15.5 Calculate fertilizer rates and cost.
15.6 Discuss proper storage of fertilizers.
15.7 Interpret MSDS (Material Safety Data Sheet) for fertilizers.

Course Standard 16

AFNR-FPM-16
Identify plant pest and pest control practices for floriculture crops.
16.1 Identify greenhouse pests; explain their life cycles, and biological nature related to pest control.
16.2 Analyze and predict damage to greenhouse crops from pests.
16.3 Compare and contrast different types of management approaches to control floriculture pests.
16.4 Explain the concepts of integrated pest management.
Course Standard 17
AFNR-FPM-17
Practice floriculture crop management skills.
  17.1 Identify and classify greenhouse crops.
  17.2 Determine the growing space for a given crop.
  17.3 Create a production schedule for a given crop.
  17.4 Develop production records and a product inventory.

Course Standard 18
AFNR-FPM-18
Explore the use of floral design skills in the preparation, presentation, and marketing of floriculture crops.
  18.1 Evaluate the economic value and importance of the floral design industry.
  18.2 Demonstrate how to construct various floral bows.
  18.3 Demonstrate skills in the preparation of potted plants for sale.
  18.4 Apply basic floral skills in the production of floral designs and other items for sale, such as bud vases, corsages, and centerpieces.

Course Standard 19
AFNR-FPM-19
Describe the importance of applying business management and customer service techniques to the floriculture industry.
  19.1 Calculate production and wholesale costs, retail value, and profit.
  19.2 Identify and practice good salesmanship techniques.
  19.3 Identify, prescribe, and practice marketing strategies for floriculture crops.