

GREENHOUSE MANAGEMENT & OPERATIONS

PROFILE OF TRAINING MASTERY

Instructor _____ Date _____

Program _____	
Grade _____	School _____
Name _____	Soc. Sec. No. _____
Address _____	Phone _____
In Case of Emergency, Contact _____	
Address _____	Phone _____
Allergies/Disabilities that might require special accommodation for training (please specify) _____	
<p>The above information can be used for school records and/or to ensure safety of students. This confidential information is not to be released to employers or the general public.</p>	

Date of Enrollment ____ - ____ - ____ Total Class Hours _____ Total Hours Absent _____
 Date of Withdrawal ____ - ____ - ____ Total On-the-Job Training Hours _____ Total Hours Tardy _____
 Date of Completion ____ - ____ - ____ Total Lab Hours _____

ON-THE-JOB TRAINING/WORK EXPERIENCE

_____	_____	_____
Duration of Employment	Job Title	Supervisor's Name
_____	_____	_____
Address of Employer		Phone
_____	_____	_____
Duration of Employment	Job Title	Supervisor's Name
_____	_____	_____
Address of Employer		Phone

Use of This Document

This document can be used to record information about the student and skills mastered. This information is useful in documenting student progress during training and in providing information about the student's qualifications to potential employers and/or for entry into advanced training programs. Instructors using these materials are authorized to reproduce this document as required for use in their training programs.



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SPECIFIC JOB COMPETENCIES

Instructor: As each competency is mastered, place your initials and the date in the blank on the left. This will verify that the student can perform the skill with a minimum of supervision.

Date/Initials	Date/Initials
<p>UNIT 1 – DESIGNING & CONSTRUCTING GREENHOUSES</p> <p>1. Match terms associated with greenhouses and greenhouse construction to their correct definitions.</p> <p>2. List factors to be considered before building a greenhouse.</p> <p>3. List legal and building requirements for greenhouse construction.</p> <p>4. Match the different types of greenhouse designs to their correct illustrations.</p> <p>5. Describe the different types of flooring used in greenhouse.</p> <p>6. Select from a list true statements concerning heating and cooling systems.</p> <p>7. Select from a list true statements concerning drainage.</p> <p>8. Select from a list true statements concerning bench types, materials and layout.</p> <p>9. Discuss backup emergency systems.</p> <p>10. List energy saving measures for greenhouses.</p> <p>11. Discuss cold frames and hot beds.</p> <p>12. Calculate building cost on a per square foot basis. (Assignment Sheet 1)</p>	<p>9. Complete statements about producing and maintaining stock plants for asexual propagation.</p> <p>10. Discuss preparing to harvest cuttings.</p> <p>11. Describe the proper procedure for harvesting cuttings.</p> <p>12. Discuss applying root promoting chemicals.</p> <p>13. Discuss sticking cuttings.</p> <p>14. Discuss transplanting rooted cuttings.</p> <p>15. Discuss labeling plants during propagation.</p> <p>16. Discuss the propagation of microcuttings.</p> <p>17. Discuss propagation by division.</p> <p>18. Select from a list true statements about propagation by layering.</p> <p>19. Design a propagation bench. (Assignment Sheet 1)</p> <p>20. Determine the correct conditions for seed germination. (Assignment Sheet 2)</p> <p>21. Demonstrate the ability to</p> <p style="margin-left: 20px;">A. Produce a crop from seed. (Job Sheet 1)</p> <p style="margin-left: 20px;">B. Produce plants from stem tip cuttings. (Job Sheet 2)</p> <p style="margin-left: 20px;">C. Produce plants from leaf bud cuttings. (Job Sheet 3)</p> <p style="margin-left: 20px;">D. Produce plants using division techniques. (Job Sheet 4)</p>
<p>UNIT 2 – CONTROLLING THE GREENHOUSE ENVIRONMENT</p> <p>1. Match terms associated with watering methods to their correct definitions.</p> <p>2. Select from a list true statements concerning temperature control.</p> <p>3. Complete statements regarding greenhouse light intensity.</p> <p>4. Match shading products to their descriptions and uses.</p> <p>5. Compare supplemental lighting systems.</p> <p>6. List methods for controlling humidity.</p> <p>7. Identify important components of water quality.</p> <p>8. Identify proper temperatures for greenhouse crops. (Assignment Sheet 1)</p> <p>9. Demonstrate the ability to</p> <p style="margin-left: 20px;">A. Apply interior shade cloth. (Job Sheet 1)</p> <p style="margin-left: 20px;">B. Assemble a tube watering system. (Job Sheet 2)</p> <p style="margin-left: 20px;">C. Correctly hand water a potted plant. (Job Sheet 3)</p> <p style="margin-left: 20px;">D. Test water pH. (Job Sheet 4)</p>	<p>UNIT 5 – MAINTAINING PLANT NUTRITION</p> <p>1. List the essential plant nutrients.</p> <p>2. Identify how media pH affects nutrient availability.</p> <p>3. Discuss fertilizer reaction on media pH.</p> <p>4. Discuss the effect of fertilizers on total soluble salt concentrations.</p> <p>5. Describe various fertilizing methods.</p> <p>6. Select from a list true statements about choosing and maintaining fertilizing equipment.</p> <p>7. Discuss fertilizer and nutrient rates.</p> <p>8. Calculate fertilizer rates.</p> <p>9. Discuss monitoring fertilizing equipment and repairing if required.</p> <p>10. Discuss media tests for nutrient levels.</p> <p>11. Discuss collecting tissue samples for nutritional monitoring.</p> <p>12. Select from a list true statements about nutritional deficiency and toxicity problems.</p> <p>13. Discuss correcting nutritional deficiencies.</p> <p>14. Calculate fertilizer cost.</p> <p>15. Discuss maintaining a fertilizer inventory.</p> <p>16. List the conditions for properly storing fertilizer.</p> <p>17. Determine the rates of fertilizer needed. (Assignment Sheet 1)</p> <p>18. Decide which fertilizers are the best buy. (Assignment Sheet 2)</p> <p>19. Demonstrate the ability to</p> <p style="margin-left: 20px;">A. Check the precision of fertilizer injectors. (Job Sheet 1)</p> <p style="margin-left: 20px;">B. Measure the total soluble salt content of a growing medium. (Job Sheet 2)</p> <p style="margin-left: 20px;">C. Test growing medium pH. (Job Sheet 3)</p>
<p>UNIT 3 – PREPARING GROWING MEDIA</p> <p>1. List the major functions of a growing media.</p> <p>2. Match the major components of a growing media to their descriptions.</p> <p>3. Discuss choosing a growing media.</p> <p>4. Select from a list true statements about shredding and screening media components.</p> <p>5. Complete statements concerning proper pasteurization procedures.</p> <p>6. List the additives for a cubic yard of 3:1:1 peat:perlite:vermiculite soilless medium.</p> <p>7. Arrange in order the proper procedure for blending media.</p> <p>8. Describe incorporation of fertilizers into growing media.</p> <p>9. Identify methods of adjusting media pH.</p> <p>10. Select from a list true statements concerning proper storage procedures for media.</p> <p>11. Calculate the volume of media required. (Assignment Sheet 1)</p> <p>12. Calculate the volume of components required to blend a media. (Assignment Sheet 2)</p> <p>13. Calculate the amount of additives required for a growing media. (Assignment Sheet 3)</p> <p>14. Demonstrate the ability to blend a growing media. (Job Sheet 1)</p>	<p>UNIT 6 – PRODUCING A CROP</p> <p>1. Match terms associated with greenhouse crop production to their correct definitions.</p> <p>2. Discuss selecting production containers.</p> <p>3. Calculate space requirements for crop production.</p> <p>4. Select from a list true statements about developing production records and maintaining a product inventory.</p> <p>5. Discuss pinching and disbudding plants.</p> <p>6. Select from a list true statements about planning production schedules.</p> <p>7. Discuss proper acclimatization procedures.</p> <p>8. Determine the space needed to grow a crop. (Assignment Sheet 1)</p> <p>9. Calculate a production schedule for a crop. (Assignment Sheet 2)</p> <p>10. Demonstrate the ability to</p> <p style="margin-left: 20px;">A. Produce a foliage hanging basket. (Job Sheet 1)</p> <p style="margin-left: 20px;">B. Produce a crop of pot mums. (Job Sheet 2)</p>
<p>UNIT 4 – PROPAGATING PLANTS</p> <p>1. Match terms associated with propagation to their correct definitions.</p> <p>2. Discuss propagation benches.</p> <p>3. Complete statements about selecting propagation containers.</p> <p>4. Select from a list true statements about seed varieties and calculating planting schedules.</p> <p>5. Discuss germination media and seed sowing methods.</p> <p>6. Arrange in order the stages of seed germination.</p> <p>7. Describe the proper method for transplanting seedlings.</p> <p>8. Select from a list true statements about preparing seed for storage.</p>	

Student ratings on specific competencies evaluated during the course are available upon student's written request and/or by calling the instructor. Parent's or guardian's signature is necessary if student is under 18 years of age.

Date/Initials

UNIT 7 – USING CHEMICALS IN THE GREENHOUSE

1. Select from a list true statements about licensing regulations and procedures.
2. Identify information on chemical labels.
3. Discuss applying chemicals safely.
4. Discuss preparing and maintaining a chemical application log.
5. Discuss choosing the proper chemicals.
6. Compute chemical cost.
7. Discuss developing and maintaining a chemical inventory.
8. Discuss mixing chemicals.
9. Discuss cleaning and maintaining chemical equipment.
10. Discuss storage of chemicals.
11. Describe proper disposal procedures for chemicals and chemical containers.
12. Design a chemical application log. (Assignment Sheet 1)

UNIT 8 – IDENTIFYING & CONTROLLING PESTS IN THE GREENHOUSE

1. Select from a list true statements about pest problems.
2. Distinguish between the types of management techniques for pest problems.
3. List methods of chemical application.
4. Complete statements about the correct time for chemical application.
5. Select from a list true statements about identifying chemical injury to plants.
6. Develop a chemical shopping list. (Assignment Sheet 1)

UNIT 9 – MARKETING GREENHOUSE PRODUCTS

1. Select from a list true statements concerning marketing territory.
2. List potential buyers.
3. Discuss customer's needs.
4. Complete statements about available sales options.
5. List factors that should be included in a marketing strategy.
6. List examples of promotional aids and public relations.
7. Select from a list true statements about factors that contribute to a good advertisement.
8. List methods of advertising.
9. Discuss maintaining a customer list.
10. Discuss production cost and selling price.
11. Create a newspaper advertisement for a greenhouse. (Assignment Sheet 1)
12. Determine the production cost and establish a selling price. (Assignment Sheet 2)

UNIT 10 – SHIPPING & RECEIVING GREENHOUSE PRODUCTS

1. Discuss preparing an inventory of salable products.
2. Discuss selecting plants that are ready for sale.
3. Select from a list items that should be included on the customer tag.
4. Identify packaging procedures.
5. Discuss loading delivery trucks for drop shipments.
6. Discuss methods of transporting products.
7. Select from a list true statements about checking received merchandise against the listed invoices.
8. Discuss filing a damaged merchandise report.
9. Write a loading order for a delivery truck route. (Assignment Sheet 1)
10. Demonstrate the ability to sleeve a potted plant. (Job Sheet 1)

UNIT 11 – CUSTOMER RELATIONS

1. Discuss arranging store displays.
2. Select from a list true statements about designing display racks.
3. Discuss greeting customers.
4. Discuss conducting a sale.
5. Complete statements about sales transactions.
6. Discuss packaging customer orders.
7. Select from a list true statements about how to handle customer complaints and returns.
8. Analyze customer relations situations. (Assignment Sheet)

UNIT 12 – PERFORMING GENERAL OFFICE WORK

1. Select from a list true statements about arranging a filing system.
2. Select from a list true statements about office supplies and equipment.
3. Discuss the proper procedures for handling telephone calls.
4. Discuss mail handling procedures.
5. Complete statements about maintaining a mailing list.

Date/Initials

6. Select from a list true statements about preparing a bank deposit.
7. Arrange in order the steps in reconciling a bank statement.
8. Designate the correct filing order. (Assignment Sheet 1)
9. Fill out a deposit slip. (Assignment Sheet 2)
10. Reconcile a bank statement. (Assignment Sheet 3)

UNIT 13 – MAINTAINING GREENHOUSES

1. Recommend maintenance and repair procedures for greenhouse interiors.
2. Select from a list true statements about maintenance and repair procedures for exterior greenhouse surfaces.
3. Discuss factors related to replacing the plastic cover on a greenhouse.
4. Select from a list true statements concerning servicing of electrical systems.
5. Discuss procedures for maintaining a greenhouse structure during severe weather conditions.
6. Compile a list of needed maintenance and repair procedures for your school's greenhouse. (Assignment Sheet 1)

UNIT 14 – SERVICING & MAINTAINING EQUIPMENT

1. List the major maintenance points for greenhouse fans.
2. State required maintenance procedures for a greenhouse cooling system.
3. Select from a list true statements concerning maintenance of automatic watering systems.
4. Distinguish between service and maintenance of sprayers.
5. Complete statements about the maintenance of hand tools.
6. Describe service procedures for business vehicles.
7. Select from a list true statements about servicing tractors, trailers and other machinery.
8. List the major service procedures for small 2-cycle and 4-cycle engines.
9. List important information that should be recorded on service reports.
10. Complete statements about cleaning the work and delivery areas.
11. Design a service record form. (Assignment Sheet 1)
12. Create a schedule for cleaning the greenhouse and work area. (Assignment Sheet 2)
13. Demonstrate the ability to change a fan belt. (Job Sheet 1)

UNIT 15 – MANAGING THE BUSINESS

1. Select from a list true statements about accounting systems.
2. Select from a list true statements about establishing business policies.
3. Discuss the use of budgets in the greenhouse business.
4. Complete statements about presenting a credit plan.
5. Select from a list true statements about calculating cash flow.
6. Match parts of a financial statement to their descriptions.
7. Select from a list true statements about completing a loan application.
8. Discuss tax requirements as they apply to greenhouse businesses.
9. Calculate net worth.
10. Complete statements about employee work schedules.
11. List guidelines for employee training programs.
12. Discuss employee evaluation procedures.
13. Identify characteristics of a good supervisor.
14. Discuss factors involved in calculating payroll.
15. Discuss computer use in the greenhouse industry.
16. Calculate an employee's paycheck. (Assignment Sheet 1)
17. Prepare a production budget. (Assignment Sheet 2)

UNIT 16 – APPLYING SAFETY REGULATIONS

1. List factors to look for when conducting safety inspections.
2. Discuss federal regulations concerning greenhouse operation.
3. Discuss safety regulations for working near automated equipment.
4. Select from a list true statements about conducting safety training programs.
5. Match the basic classes of fires with examples of each class.
6. List guidelines for using fire extinguishers.
7. Complete safety test. (Assignment Sheet 1)