



COLLEGE of CENTRAL FLORIDA
ADMINISTRATIVE PROCEDURE

Title: Environmental Horticulture Safety Program	
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Environmental Horticulture Safety Procedure

1.1 PURPOSE:

The purpose of this procedure is to establish guidelines and provide information for the establishment of a safe working environment for students in vocational and technical training classes. Consult the CF Safety Management Manual for further information.

1.2 PROCEDURE:

Safety Training

Safety Training should be conducted at the beginning of each semester or prior to the individual using a specific piece of equipment. The training should be documented on the enclosed Training Record. These records should be maintained for a period of 3 years and are subject to inspection and audit by the CF Public Safety Department or State of Florida Department of Education or other agencies.

It is reasonable and prudent for an instructor to provide all students with adequate safety training. This could include, but it not limited to:

- Safety demonstrations – attentively watched by all
- Safety videos
- The proper and adequate wearing of personal protective equipment (PPE) appropriate to the industry or program area.
- Safety quizzes and tests, etc.
- Students demonstrate proficiency in facility, tool, and equipment safety to the instructor, who uses his or her professional assessment in allowing the student to utilize shop facilities.

GENERAL SAFETY PRACTICES

BODY MECHANICS

1. Use proper muscle groups and distribute any weight.
2. Both hands should be used to pick up heavier objects.
3. Lifting heavy objects alone should be avoided. Help should be requested.
4. Pushing should be preferred to pulling.
5. Leg muscles should be used to lift heavy objects rather than back muscles.
6. Bending and unnecessary twisting of the body for any length of time is avoided.
7. Work should be done at the proper level.
8. Two people carry long pieces of materials.
9. Do not lift heavy loads above shoulder level.

FACILITY CONDITION

1. Aisles and other equipment should be arranged to conform to good safety practices.
2. Aisles and floors should be maintained, clean, dry, and unobstructed with no protruding objects.
3. Walls, windows, and ceilings should be clean, maintained in good repair, and free of protrusions.
4. Illumination should be safe, sufficient, and well placed.
5. Ventilation and temperature controls should be proper for conditions.
6. Fire extinguishers and other necessary fire equipment should be properly selected, adequately supplied, properly located, inspected, and periodically recharged as required.
7. Exits should be properly identified and illuminated.
8. Lockers and drawers should be clean, free of hazards, and doors kept closed.
9. Personnel should know the procedures for notification of fire and evaluation of premises.
10. Workplaces should be free from excessive dust, smoke, and airborne toxic materials.
11. Utility lines and shutoffs should be properly identified.

HOUSEKEEPING PRACTICES

1. Provide properly marked boxes, bins, or containers for various kinds of equipment.
2. Utilize sturdy racks and bins for material storage, arranged to keep material from falling on students and to avoid injuries from protruding objects.
3. Employ a standard procedure to keep floors free of oil, water, and foreign material.
4. Provide for the cleaning of equipment and facilities after each use.
5. Provide regular custodial service in addition to end of class cleanup.
6. Prohibit the use of compressed air to clean clothing, equipment, and work areas.
7. Floor surfaces must be maintained in a “nonskid” condition.
8. Tools and materials are stored orderly and safely.

EQUIPMENT

1. All equipment should be operated in accordance with specifications as stated in the owner’s manual.
2. Machines and apparatus should be arranged so that operators should be protected from hazards of other machines or passing individuals.
3. Equipment control switches for each machine should be easily available to the operator.
4. Machines should be turned off when the instructor is out of the room and/or if the machine is unattended.
5. Proper cleaning equipment should be used (avoid air for cleaning purposes).
6. Nonskid areas should be maintained around dangerous equipment.
7. A preventive maintenance program should be established for all equipment.
8. Cutting tools should be kept sharp, clean, and in safe working order.
9. Machines that should be defective or being repaired should be clearly marked and made inoperable by locking out the machine power switch.
10. Equipment cords and adapters should be maintained in a safe working condition.
11. Adjustment and repair of any machine should be restricted to experienced persons.
12. Ladders should be maintained and stored properly.

HAND TOOLS

1. Instruct students to select the right tools for each job.
2. Establish regular tool inspection procedures to ensure tools are maintained in safe condition.
3. Instruct students in the correct use of tools for each job.
4. Provide proper storage facilities.
5. Do not lay tools on operating machinery or equipment.
6. Keep tools out of aisles and working spaces where they may become tripping hazards.
7. Do not put sharp objects or tools in pockets. This could result in cuts or being stabbed.

GENERAL USE OF TOOLS

1. Keep cutting edges sharp and carry in a sheath or holster made for that purpose.
2. Report defective (worn, damaged and etc.) tools promptly to your supervisor for repair or replacement.
3. Keep tool handles free from splinters, burrs, etc. Handles must be tight on the head and free of cracks or splits.
4. Do not use impact tools such as hammers, chisels, punches or steel stakes that have burred heads. Dress heads to remove burrs or chipped edges.
5. When handing a tool to another person, direct sharp points and cutting edges away from both you and the other person.
6. Use only insulated tools when working around energized electrical circuits or equipment.
7. When using a knife, pliers, or other cutting tools, avoid directing the blade toward yourself. Cut away from your body and stand clear of others.
8. Do not carry hand tools in your pockets, such as screwdrivers, scribes, aviation snips, scrapers, chisels, files, etc.

Safety Controls

In order to control the hazards of chemicals used in Environmental Horticulture, it is necessary to utilize a variety of safety controls. Engineering controls are always the best choice for regulating hazardous materials; they do not require continual monitoring but do require regular maintenance. They do not depend, on a day-to-day basis, on individuals to ensure they are working.

In working with biohazards, personal protective equipment includes the proper use of safety cabinets to contain the aerosols created by working with biohazardous materials.

CHEMICAL HANDLING

All chemicals and solvents are treated as potential hazards from initial delivery to ultimate use and require the use of safe practices at all times.

▪ Responsibility

It is every Employee/Student's and supervisor's responsibility to be aware of the hazards related to the use of solvents, chemical cleaning materials, water treatment, and other chemicals and enforce the rules related to their use. The location and use of eyewash/safety shower stations and other first aid materials shall be known prior to working in any area where their use may be required.

▪ Selection of Chemical Materials

The hazards to be considered in the selection of solvents, chemical cleaning materials, water treatment and other chemicals shall be:

- (a) Contact with a hazardous material which can cause skin rash or dermatitis, corrosive burns, or eye damage.
- (a) Potential explosive or fire hazard.
- (c) The ingestion through the mouth or absorption through the skin of a poisonous, corrosive, or other hazardous substance.
- (d) The inhalation of a volatile solvent, gas, or toxic dust which may produce asphyxiation, intoxication, or damage to mucous membranes and internal organs.

▪ **Hazard Guideline**

Glossary of Terms Related to Hazards:

- (a) Chronic – Longer period before reaction
- (b) Acute – Almost immediate reaction
- (c) Local – Contact on skin and eyes
- (d) Systemic – Ingested or inhaled
- (e) Danger – highest degree of hazard (flash point below 100 F)
- (f) Warning – Intermediate degree of hazard (flash point 100 F - 200 F)
- (g) Caution – Lowest degree of hazard (flash point 200 F - 1500 F)

The selection of chemical materials should be based on safety as well as the ability to meet specific performance requirements.

Inventory Control

Conducting an annual inventory

- To check for ethers and other chemicals with limited shelf life.
- To remove surplus hazardous chemicals.
- To remove chemicals that will not or has not been used in the past 1-3 years.
- To correct incompatible storage.
- To identify which chemicals are present.
- To conduct a regular clean-up of containers and shelving.

Chemical Storage

General Rules

- Store in central, properly ventilated area.
- Know the location of the master control shut-off valves for gas, water and electricity
- Smoke detector is required.
- Shelving should be accessible with chemicals at eye level or lower; no high shelf storage.
- Avoid floor chemical storage.
- Firmly secure shelf assemblies to walls. Avoid island shelf assemblies.
- Provide anti-roll lips on all shelves.
- Shelving assemblies should be of wood construction (except for storage of oxidizers).
- Avoid metal, adjustable shelf supports and clips; use fixed, wooden supports.
- For emergencies, have:
 - Fire extinguishers of the approved type positioned near an escape route
 - Spill control and clean-up materials
 - Approved eye/face wash and shower.

Introduction

Safety cabinets should be used for specialized groups of compatible substances.

Examples of compatibility problems arising from storing chemicals alphabetically include:

- Alkanes and Ammonium Nitrate
- Hydrogen Peroxide and Hydrazine
- Ammonia and Bromine
- Nitric Acid and Phenol
- Aldehydes and Amines

- Sodium Cyanide and Sulfuric Acid
- Calcium Hypochlorite and Carbon

Even apparently safe storage can be a potential problem. The following materials are often stored together even though there are hazards should the materials mix:

- Acetic Acid and Nitric Acid
- Perchloric Acid and Sulfuric Acid
- Concentrated Acids and Bases

Separate by Compatibility

"Compatibility is Synonymous with Chemical Functionality"

Refer to:

- Material Safety Data Sheets
- Chemical Catalogues
- US School System Lab. Storage Guide

Isolate and store chemicals using the suggested guidelines outlined below.

Acid and Bases

- store acids and bases separately
- store acids in dedicated acid cabinet
- store oxidizing acids (e.g. nitric acid) away from organic acids (e.g. acetic acid)
- store hydrofluoric and perchloric acids in secondary containers manufactured from compatible materials
- safety showers and eye wash facilities must be within easy access
- protective equipment must be inspected regularly to insure proper working order, especially in corrosive atmospheres

First Aid

- (a) In the event an Employee/Student should come in contact with any type of chemical in the eyes or on the skin, first aid must be rendered to that Employee/Student as soon as possible.
- (b) Contact the Employee/Student supervisor, the Public Safety Department, the operator, or 9-1-1 without delay to initiate emergency response action.
- (c) The following steps are necessary in reporting an emergency:
 - Name of victim;
 - Nature of emergency;
 - Location of emergency (victim); and
 - Physical condition of victim.
- (d) In rendering assistance, follow first aid instructions on the container label. If first aid instructions are available, get the victim to an area where clean running water is available. Flush or irrigate the affected area for a minimum of fifteen (15) minutes or until help arrives.

RECORDKEEPING

1. Always keep an adequate record of accidents and report it through the proper channels.
2. An analysis of accidents should be made for the purpose of corrective action

1.3 RESPONSIBILITY

It is the responsibility of each instructor to ensure that a safe working environment is maintained in their area and that this policy is adhered to.

Vice President, Instructional Affairs

Date

Approved By: President

Date

