Guide to Safety in the Science Classroom
SC 1000 Laboratory Safety for Students
**Introduction**

At East Central College, the safety of our students, faculty and staff is our number one priority when working in the science laboratory. Accidents aren’t always predictable; the best way to protect yourself is to be prepared. This booklet will help you make the most of the college’s state-of-the-art labs and equipment while ensuring your own safety and that of those around you.

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Emergency Equipment

Remember: In the event of an emergency caused by fire or a chemical spill, evacuate the science lab and call 911!

- **Chemical Spill Kit:** for containing small spills
- **Fire Blanket:** for individuals or equipment
- **Extinguisher:** for small fires
- **Eye Wash Station:** for chemical splash in the eyes or skin
- **Safety Shower:** used for fire victims and contaminated clothing

Hazard Communication

Hazard communication is simply letting you know of the potential risks you could encounter when working in the science laboratory. To ensure a safe lab, always follow the guidelines provided in your Student Safety Contract. Knowing the potential dangers in a lab before you enter the room is the best way to prevent accidents and injuries.

Rules for a Safe Lab

1. Dress properly for lab: **long pants, lab coat, safety goggles, gloves and protective footwear are required** (no sandals, flip-flops or high-heeled shoes).

2. No food, drinks or gum are allowed in the lab at any time. And, as with the rest of the college campus, **ECC science labs are entirely tobacco-free** (no cigarettes, e-cigarettes, cigars or chew).
Rules for a Safe Lab (continued)

3. Familiarize yourself with the locations and procedures for using emergency equipment (eye wash, safety shower, fire extinguisher, spill kits, etc.).

4. Long hair or bangs, loose jewelry or clothing should be secured so they don’t get in the way of lab work.

5. Listen carefully for changes in lab procedures and additional safety precautions described by your instructor, and ask if you don’t understand something.

6. Notify your teacher immediately of any known medical conditions (allergies, medications, etc.)

7. Don’t engage in horseplay or rough housing at any time in the lab.

8. Dispose of chemicals and waste material in properly labeled waste containers.

9. Notify the instructor of any accidents, spills or injuries as soon as possible.

10. Be courteous; leave your area clean for the next person.

11. Notify your instructor immediately of any emergencies.

12. For fires and large chemical spills, evacuate and call 911. With fire, if possible close fume hood and turn off power.

Chemical Spills

A chemical spill can occur anytime chemicals are being used. Most spills are preventable if you:

• Look where you reach before grabbing a container.
• Make sure all containers are capped before moving.
• Check all glassware for cracks before use.

Fire Safety

This is an easy hazard to guard against when you:

• Keep your area clean and clutter free.
• Keep flammable and combustible materials away from open flames.
• Use proper protocol.

However, if the need arises to use the extinguisher in the lab, remember to just:

P - Pull the pin
A - Aim the nozzle
S - Squeeze the top handle (lever)
S - Sweep the base of the flames

Pin
Lever
Holding
Handle
Nozzle
Personal Protective Equipment (continued)

Gloves

Latex, vinyl or nitrile gloves protect against potential lab hazards such as exposure to chemicals, sharp objects or blood born pathogens. Remember to remove your gloves carefully so you won’t leave any contamination on your skin. Always wash your hands afterward even if you wore gloves!

Laboratory Coat

Anytime you’re in a science laboratory, you must wear a lab coat. It should be knee-length, and the length of the sleeve should be extended to the wrist, but not beyond it.

Material Safety Data Sheets

Material Safety Data Sheets (MSDS) are a prime source of hazard communication. They contain information regarding the procedures for handling, storing and disposing of hazardous substances. They keep users informed of potential chemical dangers.

Chemical Hygiene

Working Properly with the Chemicals You Use

Exposure to hazardous substances can happen from:

- **Ingestion** from eating, drinking or touching your mouth with contaminated fingers or gloves.
- **Injection** by needles, sharps, instruments or broken glass.
- **Inhalation**, breathing in noxious vapors or fumes.
- **Absorption**, chemicals absorbed through your skin.

Reduce your risk of exposure to chemicals by wearing your personal protective equipment!
**Chemical Hygiene (continued)**

**Handling Waste**

Remember these three guidelines:

- Produce as little waste as possible.
- Minimize the potential for release to the environment.
- Dispose of all waste in properly labeled waste containers.

**Hazard Identification**

It’s important for you to know the potential hazards of the chemicals you’re working with. In addition to the Material Safety Data Sheets, the NFPA (National Fire Protection Association) Diamond below is designed to help you assess the hazards of chemicals.

**FIRE HAZARD**

4 - Very flammable  
3 - Ignites under normal temperature conditions  
2 - Ignites with moderate heating  
1 - Ignotes when preheated  
0 - Will not ignite

**HEALTH HAZARD**

4 - Deadly  
3 - Extremely hazardous  
2 - Hazardous  
1 - Slightly hazardous  
0 - Normal material

**REACTIVITY HAZARD**

OXY - Oxidizer  
ACID - Acid  
ALK - Alkali  
COR - Corrosive  
-W - Water reactive, use NO WATER  
辐射 hazard

**Personal Protective Equipment (PPE)**

East Central College’s Laboratory Safety for Students course will train you so that you will know:

1. Why PPE is necessary  
2. What PPE is needed for each task  
3. How to properly wear your PPE

**Safety Goggles**

Goggles protect your eyes from chemical splashes, vapor and flying objects. These must be worn in the lab at all times.

**Protective Footwear**

In any science lab, there is always danger of foot injuries due to falling or piercing objects, or exposure to electrical or chemical hazards. Therefore, NO sandals, flip-flops, high heels or crocs may be worn during lab time.