

PHYSICAL SCIENCES FACULTY LABORATORY SAFETY CONTRACT CENTRAL CAMPUS



Potential hazards exist in all laboratories and some can cause serious accidents. Fortunately, most accidents can be prevented if each person in the lab observes a set of common sense precautions and uses proper experimental procedures. The following rules are to be observed at all times.

Please read the following carefully and be sure that you understand the contents completely prior to filling in the information and signing.

Student Lab Safety Contracts

Students must fill in the information, sign, and return the Physical Sciences Student Lab Safety Contract to you on the first day of lab. No student is permitted to work or be in the lab if you do not have a contract on file for them. You must retain these contracts for liability. Please store them in a safe place, not in the lab.

Students should take two copies of their contract, one to sign and return to you and one to keep in their notebook at all times for reference.

The Physical Sciences Student Laboratory Safety contract may also be found on our website, <http://browardcentralscience.org> under the **Laboratory Info** section. This contract is for the following courses: Astronomy, Earth Science, Geology, Oceanography, Physical Sciences Survey, and Physics.

Protective Clothing and Dress

All Faculty, Staff, and Students must wear safety goggles and gloves when working with chemicals in the Physical Sciences labs. Wear sensible clothing in the laboratory. Long hair must be pulled back and only closed-toe shoes are allowed.

Personal Safety Equipment:

- A.** Goggles must meet **ANSI Z87.1-1989 standards** for chemical splash and impact resistance. *Safety glasses are prohibited.* See the Laboratory Manager if you need goggles. Goggles are required whenever using chemicals or projectiles.
- B.** You must wear **gloves** at all times in any laboratory utilizing chemicals.
- C.** You must wear **closed-toe shoes** at all times. Leather shoes are suggested for best protection.

Never Allow Students to Work Alone

No laboratory work may be carried out without the supervision or authorization of an instructor. Absolutely no unauthorized experiments are to be performed. Students are never to work in the laboratory alone. All experiments are to be performed as written in the lab manual or handout or as modified by the instructor.

Students are never to be left alone in the laboratories. You are legally liable for your students' safety at all times.

Handling Chemicals and Equipment

MSDSs are located in the **Right-To-Know Compliance Center** in the Prep Rooms associated with that lab.

Never put anything in your mouth in the laboratory. No eating, drinking, gum chewing, candy, or smoking permitted in the laboratory.

Flammable solvents such as ether, acetone, toluene, alcohols, etc., must be kept well away from open flames.

All chemicals should be handled with care using goggles and gloves and be considered toxic, corrosive, flammable and/or pungent unless informed otherwise. Read all labels carefully.

Use only what is needed. Never pour unused reagent back into the reagent bottles.

Return chemicals immediately to their proper places. **Replace lids on all containers immediately after use.** Leaving containers open increases everyone's exposure to the substances within them. Spills are also more likely when a container is open. In addition, some reagents can be ruined by excessive exposure to air.

No chemical container must be found in the lab without the chemical name on it. Contact the Laboratory Manager if containers are missing labels or improperly labeled.

Keep all chemical containers covered to prevent contamination of the laboratory with fumes.

Never heat a closed container.

Clean up any spills you create. If you are uncertain as to how a spill should be cleaned, seek information from the Laboratory Staff and/or MSDS.

Use only equipment that is in good condition. Report broken or malfunctioning equipment (power supplies, ammeters, hot plates, etc) to the Laboratory Manager. Please provide the room number and equipment number. Do not use broken glassware; replace it.

Do not force glass tubing (or thermometers) into rubber stoppers, do not force tubing onto flasks or other equipment, etc.; lubricate the glass with glycerine. Protect your hands with towels when inserting glass into a stopper or use the tool in the instructor's drawer in each lab. Handle all **glassware and equipment** properly and according to safety regulations to avoid cuts and burns. Never struggle with the equipment or allow students to struggle with the equipment.

Waste

You may dispose of dilute acids with plenty of water in the sinks in the laboratories and sinks in the fume hoods. All other **chemicals should be disposed of in labeled waste containers** located on the front counter. Never put any chemical waste in the trash, down the drain, or in any container not labeled as waste. Check with the Laboratory Manager or MSDS for proper disposal information.

Waste containers are housed in the Chemical Storage Room (257C) on the Hazardous Waste cart and noted Flammable Cabinet. If you notice a waste container missing, please notify Laboratory Staff immediately.

Accidents

Report any accident or injury by contacting:

Campus Safety personnel (Day: x6626 or Night: 954-474-8786) and/or calling 911

in the event of a serious accident or injury.

Check and memorize the location of the fire extinguisher, safety shower, and eye wash station. Be prepared and know how to use this equipment in case of an emergency. Learn and memorize the locations of the building exits and evacuation routes.

Each laboratory has an eyewash station to be used if a chemical has come in contact with your eyes. Just place your face between the two fountains and press the lever to activate the water. Try to keep your eyes open as best you can, as this flushes them much more effectively.

Spill equipment and Bloodborne Pathogen Response Kits (PPEs) are located in each lab room.

In case of fire, alert the Manager and/or instructors in other labs immediately and exit the laboratory in an orderly fashion, if required to do so. Never attempt to extinguish a fire by yourself.

Working Cleanly and Efficiently

Students should never begin any experiment without reading the complete procedure first.

Make sure students keep their laboratory bench and all other working areas clean at all times and free of items not related to the procedure.

When finished, all materials should be put back and their work area cleaned of debris.

All labels must be removed from all glassware including tubes, beakers, flasks, etc. when the students are done with them.

Place all broken glassware in the appropriately labeled red broken glass bins.

Tighten the lids on all jars and bottles of chemicals. Do not leave any container open to the air.

Balance Use and Cleanliness

Balances must be kept clean. Do not put any chemicals directly on the balance pans. Clean up all spills immediately. Close all containers tightly, and clean up the surrounding area.

Gas Jet Procedure

Using the key provided, turn the gas on to the room. When lighting the burner, open up flow valve on burner, turn on gas, use striker to light the burner. When shutting off, turn the burner off first then turn the gas jet to the off position by turning clockwise all the way. Turn off the gas (burner and jet) immediately after finishing with it.

Using the key provided, turn the gas off to the room as soon as all of the students are done. Check this shut off and **ALL** gas jets before you leave the lab.

Audio/Visual Equipment

Instructions on how to use the Audio/Visual equipment is in the A/V cabinet itself. If unsure of proper usage, please check with Laboratory Staff.

Emergency Operation and Safety Features in Laboratories

Emergency Procedures

In case of a minor spill or fire, punch in the red buttons on the Emergency Utility Shut Off and the Emergency Exhaust Fan and proceed with clean up. If this is an emergency, follow the above procedure and evacuate the building. Please see **Accidents** for more emergency and spill information.

A: Emergency Utility Shut Off – use only in event of emergency

This shut off controls the gas, water, and electric to the lab.

This control must be turned on for everything to function in the room.

The only reason to turn this control off is in an emergency situation, otherwise, this control is to be left on at all times. When this control has been turned off and turned on again, the alarms on the fume hoods will sound. This is normal and only means the fume hoods are resetting and beginning operation.

Operation

To shut down everything in the room, punch in the red button.

To turn everything back on in the room, use your safety key to turn it to the "on" position.

B: Instructor Gas Shut Off – use daily only when needed

This controls the gas to the lab. This needs to be turned off every time your lab is finished. This is only to be left on when the students require the use of gas for their experiments. If there is no gas when this switch has been turned on, make sure the *Emergency Utility Shut Off* is on. The gas will not function if that control switch has been turned off.

Operation

To turn the gas on or off, use the safety key.

C: Emergency Exhaust Fan – use only in event of emergency

This fan is only to be used for emergencies, it is not to be used for daily ventilation of the lab.

Operation

Punch in the red button to turn the exhaust fan on.

Pull out the red button to turn the exhaust off.

Gas, Vacuum, and Electrical Problems

(Campus Safety x 6626, day or 954-474-8786, night)

Gas Problems: Check to make sure the Emergency Utility Shut Off and Instructor Gas Shut off are **ON**, if there is still no gas, contact Campus Safety to report it is off.

Vacuum Problems: If the vacuum pump is not working, contact Campus Safety to report it.

Electrical Problems:

First: check that the Emergency Utility Shut Off is on. *Second:* check the GFC's on the counters and student stations. Press in the RESET button. If that does not fix the problem, call Campus Safety to report loss of electricity.

Other

The Ice Machine is located in Room 257 towards the west end of the prep room.

Put things back where you found them. This includes special equipment and anything non-disposable.

Dispose of broken glass in the red broken glass containers located in each room.

Keep all Prep Room, Storage Room, and Lab Room doors locked and closed. This protects the students and is necessary for proper air handling and ventilation. No students are ever permitted in the Storage or Prep Rooms at any time.

As a matter of routine, **always wash your hands** thoroughly before leaving the lab. Arms and face may require washing if chemical contact is made with these surfaces.

If you are unsure of any of the above procedures, discuss this matter with the Laboratory Manager.

Any student not complying with the above regulations will be asked to leave the lab. Any faculty will be reported to the Associate Dean.

For more information, view the books and materials in the **Safety Library** in Room 257. You will also find a copy of BC's Chemical Hygiene Plan (complying with OSHA's Chemical Hazard Communication Regulation), OSHA's bulletins, OSHA's PPE booklet, Central Science Lab Hurricane Preparation Plan, BC Central's Emergency Operations Plan Incident Management, and BC's Science Lab Safety Manual in the compliance center wall rack across from the Chemical Storage Room. Copies of the staff and faculty safety contracts are also located here. The MSDS's are located in the Right-To-Know Compliance Centers in accordance with Florida's Right-To-Know Law. [Please do not remove any of these important information sources from the **Safety Library or Compliance Centers**.]

You may also view any of this information on our website: <http://browardcentralscience.org> under the **Laboratory Info** section.

I have read the above and agree to uphold these procedures. I have had training in the **Florida Right-to-Know Law** and will apply this information during performance of my job duties. I must continue to receive training annually as required by law. I understand that failure to comply with any of the procedures above will be reported directly to the Associate Dean.

Faculty signature

Date of signature

Faculty name, printed

Employee ID Number