

# Science Laboratory

## Astronomy Labs Policies & Procedures

for GSU at Perimeter College / Dunwoody Campus

**Welcome** to the Astronomy Labs at the Dunwoody Campus.

Please read and familiarize yourself with the following safety rules and lab procedures.

If you fail to adhere to these, you may be asked to vacate the lab.

### Science Laboratory Safety Guidelines:

All lab students must read and adhere to:

- The *Lab Policies & Procedures* document for their discipline.
- The *Science Laboratory Safety Guidelines* appended to the end of this document.

These documents will be posted at *iCollege* for your lab section.

### Entering The Lab:

- A **faculty member** or **lab personnel** must be present before you may occupy the lab.
  - If you arrive early, **wait** until the previous lab and prep is complete prior to entry.
  - Ask the **lab supervisor** if the lab is accessible.
- **Dress, Food & Drink, and Cells.**
  - Dress appropriately to your lab work (*see safety guidelines*).
  - Note that food & drink are strictly prohibited.
  - Cell calls, emails, and/or texts are not allowed except for genuine emergencies.
- **Store book-bags & personal items** at the book-bag cabinet (NC 1320) or under the table (NC 1300).
  - Lab tables are for equipment, materials, and lab notebooks only.

### Preparing for Your Lab Work:

- The first part of your lab session will consist of a pre-lab lecture by your lab instructor.
  - **Do not begin** lab work until the pre-lab lecture is complete.
- Students should work in groups of **two** unless directed otherwise by their lab instructor.
- Computers will be available at the Laptop Cart.
- Required maps, globes, imagery and/or other implements will be made available.

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### Performing Your Experiment:

- **Learn** the proper use of your equipment prior to using it and adhere to all **safety guidelines**.
  - A list of general lab safety guidelines are found at the end of this document; your lab instructor will inform you of rules for using specialized equipment.
  - Listen carefully to all instructions.
- **Do not write or mark** on lab equipment or material.  
**Do not write or mark** on lab tables.  
Keep pencils away from maps, computer screens, lenses, etc.
- **Mechanical Safety:** Be attentive to yourself and others if working with heavy or moving objects; these objects may topple; never look down if the experiment is up!
  - Avoid placing top-heavy or breakable objects at the edge of the table.
  - Wear goggles if you're shooting projectiles and announce the shot to warn bystanders.
- **Broken Glass:** If a lens/mirror or any other glassware breaks, inform your lab instructor.
  - Do not attempt to clean shards of broken glass by yourself!
  - All glassware/sharps should be disposed of in the broken glass bin and not in the trash.
- **Lenses & Mirrors:** Take special care with these for your safety and for the equipment's.
  - Some may be detached easily from their mounts if too much pressure is applied. If this occurs, place the item into its container, and inform your lab instructor.
- **Power Supplies & Spectrum Tubes:** The spectrum tube power supplies operate at high voltage.
  - Never touch the spring holders.
  - Turn off the unit before changing a tube.
  - **THE TUBES GET HOT!** Allow the tubes to cool after use.
- **More on Spectrum Tubes:** Make sure the tubes are not cracked or broken.
  - A broken tube may be disposed of in the broken glass bin.
  - Hold a tube by its end: a tube's center should be free of fingerprints.

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### At The End of Your Lab:

- The last step in each lab is to take down your experiment setup and restore all equipment to the state in which you found it. This includes:
  - Close all programs and select “*shut down*” (not “*log off*”) from the start menu.
  - Turn off AND unplug electrical equipment AND wrap their cords.
  - Re-Pack Lenses & Mirrors with care; use bubble wrap to protect surfaces.
- Tidy Your Work Station:
  - Remove trash, liquids, etc, use the hand-broom to dust up (*eraser dust, rock dust, etc*).
  - Dispose of recyclable waste into the recycle bins.
  - Dispose of non-recyclable waste into the trash bins.
- DO NOT PUT TRASH INTO THE BROKEN GLASS BIN!
- DO NOT PUT BROKEN GLASS IN THE TRASH BIN!

### Astronomy Lab Safety Information:

- Note the locations of the lab’s first aid kits.
  - They are found above the sink at front right. (*NC 1300 and NC 1320*)
  - These kits are intended for a minor injury.
  - FOR A SEVERE INJURY, USE THE TELEPHONE TO CALL SECURITY.
- Broken Glass; Mercury and/or other chemical spills:
  - Immediately inform your instructor; do not attempt to clean these yourself.
- Spectrum Tube Power Supplies: TUBES GET HOT!
  - Turn off the power supply and allow the tube to cool.
  - Keep your fingers away from the electrical sockets.
- Lenses, Mirrors, and/or other Glassware:
  - Do not use items that are chipped or cracked.
  - Alert your lab instructor to damaged glassware.
- Telescopes:
  - NEVER LOOK DIRECTLY AT THE SUN WITH TELESCOPE, BINOCULARS, NAKED EYES!

### Dunwoody Observatory:

To request time at the observatory’s telescope, you may either fill the sign-up sheet by *NC 1320* or contact the lab supervisor, Dr. R. David Rivero, at [rrivero@gsu.edu](mailto:rrivero@gsu.edu)

# Science Laboratory

## Physics, Astronomy & Geology Labs

Policies & Procedures for GSU at Perimeter College / Dunwoody Campus

### Science Laboratory Safety Guidelines

The following is applicable to all Science Laboratories:

1. Dress appropriately for lab work:
  - a. Closed-toed shoes must be worn for safety.  
Inappropriate footwear includes but is not limited to: open-toed shoes, shoes with holes or openings, sandals, flip-flops, slippers, anything that exposes the top of the foot, high heels, and platform shoes.
  - b. Avoid loose fitting clothing as it may get caught or entangled.  
Inappropriate clothing includes but is not limited to: flowing sleeves, dangling scarves or jewelry, and heavy coats or jackets.
  - c. Reduce / Eliminate exposed skin for safety.  
Inappropriate exposure includes but is not limited to: shorts, skirts that expose the legs, pants with holes or openings, exposed midriffs, and cleavage or plunging necklines.
  - d. Pull back or otherwise secure long hair, headscarves, hijabs, and/or other loose clothing.  
As an option, personal protective devices, such as face veils and/or masks may be used.
  - e. Use appropriate personal protective equipment, such as goggles or gloves, if working with chemicals, flames, particles, and/or projectiles, or as directed by your instructor.
2. Do not bring food or drink into any lab unless it is to be used as part of a lab experiment.  
Do not eat, drink, vape, smoke, chew substances, or apply cosmetics (even hand lotion and lip balm) in any lab where hazardous chemicals, radioactive materials, or biohazards are used or stored.  
Additionally, do not taste or put anything into the face or the mouth while at the lab.
3. Keep hands, instruments, and materials away from the face and the mouth.
4. Bandage all exposed cuts prior to entering any lab.
5. GSU prohibits student use of cell phones, pagers, beepers, and/or similar communication devices in classrooms, labs, libraries, and Learning and Tutoring Centers. Exceptions to this policy, due to special circumstances, shall be at the discretion of the Lab Supervisor in the individual area.
6. Students are not permitted in the lab without the supervision of an instructor at any time.  
Wait outside the room until your instructor arrives. Only students officially enrolled in the course may be present in the lab except for tours/visits with the Lab Supervisor or with your instructor.
7. Students are not permitted into the lab prep rooms or chemical storage areas at any time.
8. Students should be aware that labs contain materials which, if handled improperly, may be hazardous. Material Safety Data Sheets (MSDS), that describe hazards associated with materials used by labs, are available from the Lab Supervisor and/or your instructor.  
Students are free to examine the MSDS but they may not be removed from the lab.

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9. All body fluids are considered to be potential biological hazards. If a body fluid is present due to injury, accident, or as part of an experiment, personal protective equipment such as gloves and goggles must be used when handling or cleaning potentially hazardous biological material.
10. Students who have, or who develop, chronic medical issues such as (but not limited to) hypoglycemia, diabetes, epilepsy, heart ailments, any other medical condition which may cause sudden loss of consciousness, and students who are pregnant or nursing, should consult with their physicians or health care providers as soon as possible about potential risks associated with participation in a science lab. Such students assume all liability if they decide to remain in the lab portion of the class. A student who wishes to withdraw from a lab after consultation with his/her physician or health care provider should submit a letter from the physician or health care provider indicating that the student should not continue in the lab due to a health risk.
11. Maintain a neat lab workspace with area and aisles free of personal items.
12. **IMMEDIATELY** notify your instructor for assistance if you or anyone is injured or if any type of accident, incident, spill, or breakage occurs.
13. Familiarize yourself with the location and proper use of safety equipment such as fire alarms, fire extinguishers, emergency eyewashes, safety showers, fire blankets, and telephones.
14. Know the location of the nearest, safest exit.
15. Do not create trip hazards! Pathways to exits must be clear!
16. Use step stools to reach high objects; never stand on tables, stools, and/or chairs.
17. Never handle equipment, supplies, or chemicals until you have been given specific information for use and safety considerations.
18. Guidelines for the use of equipment, supplies, and/or chemicals including the following:
  - a. Observe & Respect all safety signs on equipment.
  - b. Avoid direct contact with hazardous chemicals.
  - c. Use all equipment and hazardous chemicals only in accordance with their intended purpose.
  - d. If you open any container, re-cap it securely.
  - e. Use care when dealing with burners, hot plates, and steam generators.  
**TURN OFF SUCH EQUIPMENT WHEN NOT IN USE.**  
Always handle such equipment as if it were hot, even if appears to be off.
  - f. Keep all lab equipment away from edges of tables, benches, or counters.
  - g. Carry microscopes with both hands.
  - h. Do not use microscopes if you have an eye infection.
  - i. Be alert for sharp or broken objects which may cause injury.
  - j. Do not use cracked or chipped glassware.

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## **Physics, Astronomy & Geology Labs**

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19. Students must follow all guidelines for disposal of materials including:
  - a. Do not attempt to clean broken glasses and/or spilt chemicals yourself.  
**IMMEDIATELY** notify your instructor in the event of a break or a spill.
  - b. Dispose of needles, nails, and/or sharps at an approved sharps container.
  - c. Dispose of broken glass at an approved broken glass container.
  - d. Dispose of other hazardous materials as specified by your instructor.
  - e. Correctly discard any excess reagents; do not return any excess reagent to the bottle.
  - f. Dispose all chemical waste at the proper waste container as indicated by your instructor.  
**DO NOT POUR CHEMICALS INTO SINKS WITHOUT YOUR INSTRUCTOR'S PERMISSION!**
20. No horseplay will be permitted at the lab.

Do not distract or startle other people when they are handling hazardous materials.
21. Any student who endangers another's safety or his/her own safety will be forbidden use of the lab.
22. Willful damage, destruction, and/or theft of GSU property is prohibited and will be subject to appropriate punishment as prescribed in accordance with the Student Responsibilities Section of the Perimeter College Student Handbook and/or other appropriate policies.
23. Reconfiguring lab computers and/or installing programs onto lab computers is prohibited.
24. Before leaving the lab:
  - a. Clean up after yourself. Clean up and return all materials to their proper location. Wash test tubes, beakers, and/or other glassware. Thoroughly wipe your lab space **BEFORE AND AFTER** each exercise with cleaning utilities provided at the lab.
  - b. Turn off all gas nozzles and water faucets; turn off and unplug all hotplates, meters, PSs, and/or other electrical items.
  - c. Disassemble your experimental set up and leave your lab station as you found it.  
For instance, remove any clamps, tape, string, etc., that you may have used.
  - d. Return items that you may have used to their storage locations.
  - e. Wash your hands with soap and water.
  - f. Sinks are not trash receptacles!
  - g. No lab material is to leave the lab.
25. Due to the particular dangers of the science labs, under no circumstances, whatsoever, are children to be allowed into the science labs. This policy shall not be applied to students under the age of sixteen, who are enrolled in a course or program, either for credit or non-credit, or recreation, or who are attending any event on campus open to the public.
26. Illegal or controlled drugs and/or usage is expressly forbidden and constitutes a safety violation.

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## Physics, Astronomy & Geology Labs

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### Physics/Astronomy Specific Laboratory Safety Guidelines

1. Be familiar with and follow all General Science Laboratory Safety Guidelines above.
2. Wear impact-resistant safety goggles in the lab when instructed to do so.
3. Goggles, binoculars, telescopes, spectrosopes, 3-D glasses, and/or any lab devices that are positioned near the eyes should be sanitized before and after use.  
This does not apply if such goggles belong to you, and you are the only person using them.
4. Do not position yourself under hanging masses or other heavy objects.
5. Stay out of the path of moving objects to avoid injury.
6. Handle hot materials with protective gloves. Be careful around steam. Keep hands and face away from spouts that emit steam. Be aware that true steam is invisible.
7. When working with electrical circuits:
  - a. Construct only those circuits prescribed by the lab write-up.
  - b. Do not turn on the power supply until your instructor has checked your circuit.
  - c. Use only currents and voltages prescribed by the lab write-up.
  - d. Do not allow electrical circuits to dangle over the edge of your lab table.
  - e. If you observe smoke, melting, and/or other electrical irregularity, **IMMEDIATELY** turn off the power and notify your instructor!  
Turn off **AND** unplug electrical equipment when done. **WRAP ANY POWER CORDS!**  
Do not leave power cords dangling in the aisles.
  - f. Unplug electrical equipment by pulling on the plug, not on the cord.
8. When using lasers:
  - a. Do not shine the laser into anyone's eyes, including your own.
  - b. Do not look into the laser, even when it's turned off.
  - c. Do not look directly at the laser's reflection off a shiny surface.
9. When working with radioactive materials:
  - a. Never put radioactive sources into the mouth or the face.
  - b. Make sure all radioactive sources are accounted for before leaving the lab.
  - c. Wear appropriate gloves and coats when handling radioactive minerals or liquids.  
Wash hands with soap and water after coming into contact with such material.  
This does not apply to plastic encased samples which require no special handling.

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- d. Use the principles of **TIME**, **DISTANCE**, and **SHIELDING** to minimize exposure.
  - e. Decrease **TIME** spent next to sources.
  - f. Increase **DISTANCE** between you and the source.
  - g. Increase **SHIELDING** between you and the source.
10. Spectrum tube power supplies operate at **HIGH VOLTAGE**.  
Turn off its power supply and let the tube cool before attempting to change the tube.
11. When working with lenses, mirrors, and/or other glassware:
- a. Examine objects carefully before picking them up.  
If they're chipped or cracked, you could get cut.
  - b. Alert your instructor to any chipped, cracked, and/or broken glassware.
  - c. Do not set lenses or mirrors near the edge of the lab table where they might fall.
  - d. Do not stack anything on top of a lens or a mirror.
12. Never look at the Sun, either directly with the naked eye or through a telescope.



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### Geology Specific Laboratory Safety Guidelines

1. Be familiar with and follow all General Science Laboratory Safety Guidelines above.
2. Students who sign this document acknowledge that they have viewed the geology safety video, available online at <http://sites.gsu.edu/paglabs/safety-pnp/>
3. When conducting a hardness test with a glass plate, or a streak test with a streak plate, lay the plate flat on the table and do not hold it in your hand: the edges might be sharp!  
Inform your instructor immediately if a plate is broken so that it can be disposed of safely.
4. Do not attempt to clean up broken glass by yourself.
5. Do not stick yourself or anyone else with nails or teasing needles (dissecting needles).
6. When using 10% hydrochloric acid for rock and mineral identification, students should use only a very small drop of acid and should use care so as to not get acid onto the lab table, into their eyes, skin, or clothes, or onto any other student.
7. Rinse and blot all samples with paper towels after acid tests: do not leave wet or acid-covered specimens at the lab tables, and do not put wet or acid-covered specimens into the specimen trays.
8. If you get acid on your hands, wash immediately and notify your instructor.  
Do not rub your eyes after doing an acid test until after you have washed your hands.  
If you notice any adverse reactions after washing thoroughly get prompt medical attention.
9. If acid gets into the eyes, use the emergency eyewash bottle, flush the eyes immediately with water for a minimum of 15 minutes then get prompt medical attention!
10. If acid gets onto any other area of the body, inform your instructor and use the safety shower, as appropriate; if the affected area is underneath clothing, the clothing should be removed; then get prompt medical attention.
11. Report any acid spill immediately to your instructor.
12. Close acid bottles securely and return them into the acid storage cabinet.
13. Do not taste any minerals or rocks, or put anything into your mouth or your face at the lab.
14. Microscopes should be carried with two hands in order to prevent its dropping.  
Dropping a microscope damages it and it may injure your feet.
15. If using microscopes and/or illuminators, be aware of their cords and do not trip over them.  
Tripping over their cords may pull them onto the floor, which may injure you and/or others.
16. Turn off **AND** unplug electrical equipment when done. **WRAP ANY POWER CORDS!**  
Do not leave power cords dangling in the aisles.
17. Unplug equipment by pulling on the plug, not on the cord.

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All lab students are required to comply with the *Science Laboratory Safety Guidelines* as specified in this document or additional guidelines that may be listed in their course syllabi. Any student who does not comply with the *Science Laboratory Safety Guidelines* will be subject to the following penalties:

Violation	Consequence
1 <sup>st</sup> Safety Violation	Warning
2 <sup>nd</sup> Safety Violation	Removal from laboratory class and assignment of a zero for that laboratory class period.  The instructor will complete the <i>Disruptive Behavior Form</i> .  See: <i>"Policy on Disruptive Student Behavior in an Academic Setting"</i> .
3 <sup>rd</sup> Safety Violation	Removal from laboratory class and assignment of a zero for that laboratory class period.  The instructor will initiate disciplinary sanctions deemed appropriate, as specified by the <i>Student Code of Conduct</i> , which may be escalated to include expulsion.  See: <i>"Policy on Disruptive Student Behavior in an Academic Setting"</i> .

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IN CASE OF EMERGENCY		
<b>Security Phone</b>	<b>Emergency: Dial 1</b> State the nature of your call. (emergency responders will be dispatched)	<b>Non-Emergency: Dial 1</b> State the nature of your call. (security will be dispatched)
<b>Other Phone</b>	<b>Dial 404-413-3333</b> (campus police)	<b>Dial 404-413-2100</b> (campus escort)
<b>Emergency Situations</b>	<b>Instructor Actions</b>	<b>Student Actions</b>
<b>Person Injured (emergency)</b>	<ol style="list-style-type: none"> <li>1. Dial 1 on security phone.</li> <li>2. Aid the person with the first aid kit until emergency responders arrive.</li> <li>3. Contact the department chair and/or the lab supervisor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn off equipment, unplug cords and clear the aisles.</li> <li>2. Exit the room into the hall.</li> </ol>
<b>Person Injured (non-emergency)</b>	<ol style="list-style-type: none"> <li>1. Dial 1 on security phone.</li> <li>2. Aid the person with the first aid kit.</li> <li>3. Contact the department chair and/or the lab supervisor.</li> </ol>	Continue lab work unless directed otherwise by instructor and/or the lab supervisor.
<b>Tornado Alert Weather Alert</b>	Direct students to:	<ol style="list-style-type: none"> <li>1. Turn off equipment, unplug cords and clear the aisles.</li> <li>2. Exit the room into the hall.</li> </ol>
<b>Fire Alarm Bomb Threat</b>	Direct students to:	<ol style="list-style-type: none"> <li>1. Turn off equipment, unplug cords and clear the aisles.</li> <li>2. Exit the room through the emergency exit.</li> </ol>
<b>Electrical Short (non-emergency)</b>	If a small amount of smoke comes from electrical equipment, with no threat of fire, direct students to:	<ol style="list-style-type: none"> <li>1. Turn off equipment, unplug cords and clear the aisles.</li> <li>2. Inform your instructor.</li> </ol>