MONTCLAIR STATE UNIVERSITY

Department of Physics & Astronomy

Safety Rules for Physics Laboratories

The following guidelines and policies are designed to protect students from injuries and exposure to hazardous chemicals in the academic laboratories. The safety rules will be enforced at all times by authorized department personnel. Students who do not follow the safety rules will be subject to dismissal from the laboratory.

I. Guidelines for Personal Apparel in the Laboratory

A. To avoid exposure to injuries, open-backed shirts, bare midriff shirts, or shirts which expose areas of the torso are not permitted.
B. Wear shoes which completely cover the feet. Sandals, perforated shoes, open-toed shoes, or open-backed shoes are not permitted in the laboratory. Watch out for dropped masses.
C. Confine loose clothing and tie up long hair while performing experiments.
D. Most of the experiments in this course can be safely performed without gloves. If required, gloves will be provided and must be worn.
E. For your protection, jewelry should not be worn in the laboratory. Dangling jewelry can become entangled in equipment and can conduct electricity. The use of headphones (i.e. iPods) other than approved hearing protection devices is prohibited.
F. Do not eat or drink in the laboratory. Do not use laboratory containers and utensils for food and drinks storage.

II. General Guidelines for Laboratory Procedures

A. Doing experiments in the laboratory without supervision is prohibited. The performance of unauthorized experiments and the use of any equipment in an unauthorized or unsafe manner are strictly forbidden.
B. Horseplay in the laboratory is unacceptable behavior and is cause for immediate removal from the laboratory.
C. Examine all apparatus for defects before performing any experiments. Do not use damaged, cracked, or otherwise defective glassware. Consult your instructor about where to place broken glass. If you break a thermometer or find a broken thermometer, report it to your instructor immediately. Any spilled mercury should not be handled.

D. Please exercise caution when dealing with electrical devices.
E. Do not remove apparatus from cabinets without the permission of the instructor.
F. Coats, bags, and other personal items should be stored in the proper areas; not on the bench tops or in the aisle ways. Student and instructors should be able to easily move around lab tables.
G. All containers containing chemicals or solutions of any kind that are retained between laboratory sessions must be labeled so that the contents can be identified by others. The label must also contain the date and the name of the responsible person.
H. Return all of your equipment and glassware to its original location at the end of the laboratory session.
I. When the fire alarm sounds you must evacuate the building via the nearest exit. Extinguish all flames and turn off all equipment, as appropriate, before leaving.
J. All personal accidents, injuries and illnesses, however slight, occurring in the laboratory must be reported immediately to the instructor.
K. Visitors, including children, are not permitted to enter the laboratories.
L. Do not take laboratory equipment (including glassware) outside the lab without the permission of the instructor.
M. **High Voltage:** Exert extra care around high voltage equipment (above 50V DC), and do not modify it in any way unless directed by the instructor. Always check with your instructor before starting it, and use only one hand when adjusting the voltage. Promptly return to low voltage or turn it off when measurements are complete.
N. **Laser Safety**: When working with low power lasers (Class 2 lasers, power < 1 mW in visible range) never look directly into the beam, and never direct it at another person. Keep the beam at lower level than your eyes, and remove jewelry, watches and other shiny objects during alignment, as they can reflect and accidentally direct the beam into another person's eyes. Always wear laser goggles for lasers operating outside the visible wavelength range. Additional guidelines on working with lasers can be found in the *CSAM Laser Safety Manual* available on the CSAM Safety Manual Homepage.
O. **Radioactive Materials**: Only "exempt" radiation sources (which give off very small amounts of radiation according to the norms set by the Nuclear Regulatory Council) will be used in advanced physics labs. These are to be used only under the instructor's supervision in an authorized area. Do not ingest or inhale the source or any parts of it; treat it as you would a chemical. Do not damage, drop, or attempt to open any sealed containers storing radioactive sources. Gloves, safety glasses, and lab coats will be used when handling liquid sources. Radioactive materials should be securely stored, and accessed only by authorized personnel. Do not expose radioactive sources to chemicals or extreme temperature changes. Additional guidelines on working with radioactive sources can be found in the *MSU Radiation Safety Manual* available on the CSAM Safety Manual Homepage.

III. General Guidelines for Students working in Physics Research Labs

In addition to the above safely precautions, we recommend that students working in Physics research labs follow the safety guidelines below:

A. All liquids used in the fluid mechanics lab must be stored in labeled containers.
B. All electrical supplies must be safely put away after use.
C. Any liquid (safe liquid) spills must be cleaned up immediately to avoid injuries. In case of bigger leaks, the appropriate authorities (the primary faculty in charge or other department faculty/staff) must be notified.
D. All glassware must be handled carefully and stored in its appropriate place after use.
E. Only authorized students are permitted entry to research labs. Guests/visitors are not allowed unless permission from the supervising faculty is obtained.
F. Equipment cannot be removed from labs for any reason without prior permission from the faculty in charge.
G. Please exercise caution when handling liquids in the vicinity of electrical equipment.
H. When working with Class 3 lasers or higher, follow the guidelines listed in the *CSAM Laser Safety Manual* available on the CSAM Safety Manual Homepage.
I. Working in the lab during late evening hours after everyone has left is not recommended. If you must work then, please notify the faculty in charge in advance.

I have read and understand the safety rules and am aware of the consequences of failing to observe them.

Print Name: _____

Course and section: _____

Signature:_____ Date: _____