

LABORATORY SAFETY POLICY (Version 2.0)
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Safety is an important aspect of any working environment. As a nurse/biomedical engineer you will be responsible for your own safety, the safety of your patients and the safety of people working with you. As a student, you are responsible for your own safety and the safety of the people working around you.

Safety issues can generally be divided into three areas. These are biological, chemical and physical safety. Biological safety involves protection from infectious biological agents. Chemical safety involves protection from both acute and chronic chemical hazards. Physical safety involves protection from physical dangers in the work place.

It is the instructor's responsibility to provide students with the information they need to protect themselves and to assure that they comply with the letter and intent of this policy. Students not complying with this policy should be given a warning. Repeated failure to comply should result in a grade reduction and ultimately ejection from the laboratory.

Biological Safety

Fresh and dried blood and body fluids can contain a number of infectious agents. These agents include HIV (the AIDS virus) and hepatitis viruses. Therefore, special precautions should be taken when working with blood. The following guidelines must be followed by all students working with blood:

1. Wear gloves at all times when handling blood. Wear gloves and splash resistant goggles or glasses when observing or performing surgery.
2. Discard all sharp and/or blood contaminated items in an approved "sharps box" having the biohazard symbol clearly displayed on its outer surface.
3. Disinfect your work area with an approved "hospital" type disinfectant when done handling blood. Carefully follow the instructions on the disinfectant label. In particular, most disinfectants must be left on the surface being disinfected for 10 to 15 minutes. Be sure to give the disinfectant time to work.

Chemical Safety

In general, handle all chemicals with care. Minimize your exposure to them. The toxic effects of some chemicals may not be known yet. Be aware of both the immediate and long term effects of chemical exposure. When in doubt, assume it is hazardous. Specific guidelines include:

1. Wear splash resistant goggles or glasses when handling chemicals and when in the chemistry laboratories.
2. Plan your procedures to avoid excessive contact with chemicals.
3. Wear gloves when working with preserved specimens. Preserved specimens contain trace amounts of formaldehyde and gluteraldehyde. These chemicals can cause reactions (rashes and respiratory problems) in sensitive individuals.
4. Wash your hands thoroughly after each laboratory period. Immediately wash off any chemicals you spill on yourself.

5. **Eating and drinking** when handling chemicals and in chemistry laboratories is **strictly prohibited**.
6. Be careful with drugs, dyes and stains as these materials are often toxic.
7. Consider the concentration and physical form of chemicals. Natural materials that are normally dilute and impure may be toxic in concentrated, pure form.
8. Always know the symptoms of over-exposure to the chemicals you are using.
9. Always dispose of chemicals properly. Check before pouring anything down the drain. Place toxic materials in the designated containers.
10. Always review the MSDS and other literature on chemicals before using them.

Physical Safety

Common sense is your best protection from physical hazards. Be aware of what you are doing and consider any physical hazards that your procedures may involve. In addition, since we are dealing with certain biological and chemical agents in the laboratory, certain sanitary precautions must be adhered.

1. Be aware of hot items like Bunsen burners and hot plates.
2. Be aware of any sharp instruments like needles, razor blades and scalpels.
3. Don't smoke, eat food or drink in the laboratory. Make a habit to keep hands away from your mouth. Gummed labels should never be moistened with your tongue; use tap water instead.
4. Be aware of any electrical hazards. Don't electrocute yourself on electric items. Low DC voltage digital and analog circuits are generally safe.
5. Be aware of any special physical hazards (such as flammability) of the chemicals that you use.
6. Read labels carefully before removing substances from a container. Never return a substance to a container; this same rule applies to stock solutions.
7. Discard used chemicals and materials into appropriately labeled containers. Certain chemicals should not be poured down the sink: ask your instructor if you need assistance.
8. Do not discard microbiological material and organisms down the sink; they should be discarded in specially marked containers for autoclaving or sterilizing before they can be safely discarded in regular garbage.
9. Always wash your hands with soap and warm water before leaving the laboratory.

Documentation and Record Keeping

Each student should sign a copy of the attached form acknowledging that they have read, understood and will comply with the MSOE Laboratory Safety Policy. These forms should be kept by the instructor until the course is over. Students should not be allowed to participate in laboratory work until they have signed this form.

Please complete the following form and turn it in to Dr. Tritt at the start of the week 2 laboratory period.

I have read and understand the MSOE laboratory safety policy. This certifies that I will comply with this policy.

Print Name _____

Sign Name _____

Date _____