



INSTITUTIONAL LABORATORY SAFETY POLICY AND GUIDELINES

(as approved in the 11th Academic Council dated 16th September 2022)

**BODOLAND UNIVERSITY
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Bodoland University is dedicated to maintain safety in the laboratory for students, faculty, staff and other visitors. Everyone is responsible for safety in the laboratory. All the students, researchers, faculty members and staffs should follow the laboratory safety guidelines while working in the laboratory/workshop in order to avert the risk of accidents, injury, property damage, etc. This guideline will help in avoiding accidents and health risks at work places, and will help to act appropriately in case of emergencies and to minimize the environmental issues.

I. General guidelines

1. Display “Do” and “Don’t” in all laboratories.
2. Study the laboratory manual carefully and understand before working in the lab.
3. Wear proper protective clothing (lab coat and secured shoes) and eye protection.
4. No food items or drink allowed inside the lab/workshop.
5. Do not smell gases directly. Never taste any solvent/chemical and do not pipette out by mouth.
6. Always wear gloves when using any hazardous or toxic material. Safety goggles should be used when working with flames, glassware or heated liquids.
7. Never use/handle any equipments/instruments unless you are trained and permitted. Use equipment only for its designated purpose.
8. Always keep the lab clean and in orderly manner.
9. When working with electric circuits, be sure that the current is turned off before making adjustments in the circuit. Avoid using of extension cords whenever possible. Never use, attach, modify/change any high voltage equipment without consulting the concerned person.
10. Do not leave any ongoing experiments unattended.
11. Know the locations of eye-wash basin, first-aid box, fire extinguishers, and fire blankets, and learn how to use them. First-aid box must be placed in the laboratory/ workshop with proper maintenance for immediate use in case of any accident. Concerned person should be immediately informed in case of any accident in the lab/workshop. Know emergency exit routes.
12. Handle all living organisms used in the laboratory activity in a humanitarian manner.
13. Wash your hands properly after working in the lab even if the gloves are used.

14. Handle flammable liquids with great care and always keep them away from the naked flames.
15. Always handle alkalis and concentrated acids with great care.
16. After working in the laboratory, always ensure that the gas burner and electric switch are turned off and check the water tap.
17. If an unknown chemical is produced in the laboratory, the material should be considered hazardous.
18. Try to adopt greener methods to minimize the generation of any hazardous and waste product.
19. Containers holding prepared solutions (contents, hazards and concentration) should be labelled properly.
20. Departments having laboratories shall select one Safety in-charge from amongst the faculty members or technical staffs who will take care of the safety measures in the lab.
21. Always keep reagent containers clean and sealed after use. Never leave containers of chemicals open.
22. When opening/removing a septum or stopper from your flask/reagent bottle, first open the side keeping it away from your face (it may be under pressure).
23. All experiments involving harmful chemicals must be done in a fume hood whenever possible.
24. Any cuts or wounds in the skin should be covered with an adhesive plaster before working in the lab.
25. Avoid wearing jewelry in the lab as this can pose multiple safety hazards.
26. The infected animals or diseased animals should be buried in the burial pit or trench at least of 3 m deep and 2.5 m wide along with the contaminated soil, meat, litters etc.
27. The infected animals or contaminated items may also be burnt in the proper far areas.
28. Utmost care and precautions must be taken while handling the diseased or infected animals to control the spread of disease.
29. Glasswares broken or used must not be disposed with normal trash.
30. Broken glassware should immediately be cleaned up with a small brush and dust pan available to clean up after small accidents. Forceps or duct tape can be used to pick up the smaller pieces of broken glass.

31. Discarded glassware must not contain any hazardous wastes, pathological waste or radiological wastes.
32. Discarded glassware must be placed in puncture proof, double-lined cardboard box or a container. Afterwards must be sealed and labelled.
33. Laboratory safety guidelines should be displayed in all the laboratories/workshops.

II. Chemical spillage

1. Corrosive chemicals and acids must be neutralized using soda ash (Na_2CO_3 , sodium carbonate) or sodium bicarbonate (NaHCO_3). The chemical spills can also be controlled by covering the spill area with dry sand. The leakage of alkali may be neutralized by weak acids like citric acid or ascorbic acid.

III. Electrical & electronics equipment

1. Never try to change or modify any high voltage equipment.
2. One should make sure that the high voltage power supply is in the off mode before connecting or disconnecting any high voltage cable.
3. Before supplying current to any electrical equipment, one should be sure that the equipment is properly earthed and the insulation provided in the cable is sufficiently strong.
4. A person must wear shoes in electrical lab.
5. In case of an electrical shock, firstly, the attendant/any person present should be to switch off the connection immediately. If not possible, the shocked person be either pulled touching his/her cloth or pushed with a piece of dry wood standing on a dry wooden board or thick dry paper. One should never touch the body of the socked person.
6. In case of fire, the best remedial measure is to disconnect the electric supply immediately. In such case, do not throw water on a live conductor and equipment. It is dangerous. Fire extinguisher should not be used on electrical equipment unless it is marked as suitable for that purpose.

IV. Disposal of chemical and biological wastes

1. Never dispose of chemicals or any waste in the sink. The waste materials should be collected in the proper waste collector to dispose of.

2. Waste solvents must not be disposed into the sink. These should be kept in waste solvent bottles that have been specially set apart for each solvent, and should be reused if possible. Different solvents should not be mixed where possible.
3. Animal tissues must not be thrown in the laboratory garbage/dust bin. It should be properly disposed of in the orange or red biohazard bags.
4. All biohazard materials must be decontaminated before disposal.
5. Affix waste containers with appropriate caution labels indicating the hazard classification and class of waste.

V. Radioactive material precautions

1. Prior to working with any radioactive material, the persons are advised to know the characteristics of the radioisotopes that are being used, including half-life, types and energies of emitted radiations, the potential for exposure, how to detect contamination, and the annual dose limit on intake.
2. Dispose of waste radionuclides and their solutions in accordance with the University's Hazardous Waste Management Plan.
3. Plan experiments so as to minimize exposure by reducing the time of exposure, using shielding against exposure, increasing your distance from the radiation, and paying attention to monitoring and decontamination.
4. Keep an accurate inventory of radioisotopes.
5. Place only materials with known or suspected radioactive contamination in appropriate radioactive waste containers.

VI. Hazard Warning

Hazard warning signs are required for individuals who work in or may need to enter an unfamiliar laboratory as to the types of hazards that are present. The exterior surface of laboratory doors must be reserved for hazard communication labels. All laboratories containing hazardous materials must have the appropriate hazard warning posted on the entrance door. All chemical storage areas within the laboratory must be labelled with the appropriate hazard warning. Work areas designated for the use of highly hazardous chemicals (such as cadmium or pyrophoric chemicals) must also be appropriately labelled. Storage and work areas for biological and radiological hazards must also be properly labelled. If someone needs to enter a location posted with a hazard sign, consult with the laboratory personnel before entering and make sure the room is secured when you leave.

Hazard symbols are easily recognizable symbols design to warn about hazardous materials, locations, or objects. The following are typical hazard warning symbols utilized throughout Bodoland University.



Flammable



**Harmful /
Irritant**



Corrosive



**Poison /
Toxic**



Explosion



Biohazard



Oxidizer



**Environmental
Hazard**



Radioactive

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