

HEALTH AND SAFETY

Safety is the prime requisite in all the work places. A safe and healthy working atmosphere is a basic necessity and has to be ensured in all the laboratories without fail. A simple mistake may lead to severe hazards and accidents and may even lead to irrecoverable damage to human lives, equipments and machineries. Strict adherence to safety rules, practices and precautions can facilitate and ensure a safe on site working environment.

Necessary charts, posters and pictures emphasizing the importance of safety, precautions to be taken, first aid methods etc, shall be displayed in the laboratories and workshops in addition to necessary instructions and training programs.

A sample poster is given below

Do^s

- 1. Do** the necessary preliminary preparations for the Experiment
- 2. Do** the connections neatly and firmly tightened
- 3. Do** only the experiment assigned to you
- 4. Do** the experiment carefully following the correct procedure

Don't^s

- 1. Don't** run or play in Lab.
- 2. Don't** eat drink or smoke in labs.
- 3. Don't** keep unwanted materials in the work table.
- 4. Don't** touch live conductor or wire with the bare hand.
- 5. Don't** clutter floor and tables with books, bags or cases

The following safety precautions and guidelines shall be strictly followed in each laboratory.

- Always wear a protective lab coat/overall and safety shoes.
- Locate and identify the positions of main switches, circuit breakers and emergency switches.

- Make sure of the availability and access to first aid kits, fire extinguishers and other safety equipments.
- Identify the emergency exit ways and assembly points to be used in case of fire or similar hazards.

4.2 FIRST AID PREPARATIONS

The following first aid preparations shall be done in advance

- Provide adequate number of First aid items in each laboratory at locations which are easily accessible.
- Keep necessary fire extinguishers, sand buckets, fire blankets in all the laboratories and workshops
- Ensure their compliance and working condition in accordance with the specified standards envisaged.
- Install fire alarm cum detector circuits and make sure of their working condition periodically.

HEALTH AND SAFETY IN COMPUTER LABORATORIES

Safety is the prime requisite in all work places. A safe and healthy working atmosphere is a basic necessity and has to be ensured in all the computer laboratories and workshops without fail. Strict adherence to safety rules, practices and precautions can facilitate and ensure a safe on-site working environment.

1. General Operating Guidelines

To ensure health and safety inside the computer laboratory, the following should be taken into consideration by all concerned:

- ❖ Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that the unit is working within the specified operating range.
- ❖ Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.
- ❖ Never restrict airflow into the computer by blocking any vents or air intakes.
- ❖ Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- ❖ Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- ❖ If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

2. Fire Detection and Protection

The entrance of each laboratory should be fitted with the fire detecting system and a fire extinguisher. Carbon dioxide, ordinary (*BC-rated*) dry chemical and halogen fire extinguishers may be used. **DO NOT USE** water extinguishers on energized electrical equipment. Fire extinguishers must also be provided in the corridors of the buildings, and inside very large rooms.

A written, up-to-date *Emergency Exit Plan* for workplace is essential in case of emergency. Make sure all users read and understand the Computer Laboratory's Emergency Exit Plan. The plan should contain information about evacuation from the facility, including who is in charge of the evacuation. The Emergency Exit Plan for the Computer Laboratories can be found in **Appendix 14**.

Primary and secondary escape routes should be outlined for every area of the building housing the laboratories. Since stairways are the primary escape route in multiple story buildings, they should not be used for any kind of storage.

3. Avoiding Potential Health Problems

What Can A User Do To Help Himself?

Make full use of the equipment provided, and adjust it to get the best from it and to avoid potential health problems. It is worth bring as comfortable as possible, to avoid tiredness and back strain.

Here are some practical tips:

Getting Comfortable

- ❖ Adjust your chair to find the most comfortable position for your work. As a broad guide, your forearms should be approximately horizontal.
- ❖ Make sure you have enough work space to take whatever documents or other equipment you need.
- ❖ Try different arrangements of keyboard, screen, mouse and documents to find the best arrangement for you.
- ❖ The blinds/curtains in the laboratories should be closed at all times, to avoid glare. This should prevent irritation and time spent adjusting the monitor to avoid reflections, and moving desks to avoid eyestrain.
- ❖ Make sure there is space under your desk to move your legs freely. Move any obstacles such as bags and sports equipment.
- ❖ Avoid excess pressure from the edge of your seat on the backs of your legs and knees.

Keying in

- ❖ Adjust your keyboard to get a good keying position. A space in front of the keyboard is sometimes helpful for resting the hands and wrists when not keying.
- ❖ Try to keep your wrists straight when keying. Keep a soft touch on the keys and don't overstretch your fingers. Good keyboard technique is important.

Using a Mouse

- ❖ Position the mouse within easy reach, so it can be used with the wrist straight. Sit upright and close to the desk, so you don't have to work with your mouse arm stretched. Move the keyboard out of the way if it is not being used.
- ❖ Support your forearm on the desk, and don't grip the mouse too tightly.
- ❖ Rest your fingers lightly on the buttons and do not press them hard.

Reading the Screen

- ❖ Adjust the brightness and contrast controls on the screen to suit lighting conditions in the room.
- ❖ Make sure the screen surface is clean.
- ❖ In setting up software, choose options giving text that is large enough to read easily on your screen, when you are sitting in a normal, comfortable working position. Select colors that are easy on the eye (avoid red text on a blue background, or vice-versa).
- ❖ Individual characters on the screen should be sharply focused and should not flicker or move.

Posture and Breaks

- ❖ Don't sit in the same position for long periods. Make sure you change your posture as often as practicable. Little movement is desirable, but avoid repeated stretching to reach things you need.
- ❖ Most jobs provide opportunities to take a break from the screen, e.g., to do filing or photocopying. In the case of students, you are advised to take breaks, and exercise. This should also avoid the compulsion to eat/drink in the laboratories.