

# THREATS TO COMPUTERS AND OTHER ICTS AND THEIR SAFEGUARDS

This handout helps students understand common threats that affect computers and other Information and Communication Technologies (ICTs), and the measures that can be taken to protect them.

## ***Computer Viruses and Malware***

**Threat:** Malicious programs that damage files, slow down computers, steal information, or disrupt operations.

**Safeguard:** Install antivirus software, update software regularly, and avoid opening suspicious files.

## ***Unauthorized Access (Hacking)***

**Threat:** People may gain access to computer systems without permission and steal or alter information.

**Safeguard:** Use strong passwords, enable two-factor authentication, and limit access to authorized users.

## ***Theft of Equipment***

**Threat:** Computers, tablets, projectors, and other ICT devices may be stolen.

**Safeguard:** Use locks, secure rooms, alarms, and maintain an inventory of equipment.

## ***Power Surges and Power Failures***

**Threat:** Sudden changes in electricity can damage hardware and cause data loss.

**Safeguard:** Use UPS devices, voltage stabilizers, surge protectors, and perform regular backups.

## ***Physical Damage***

**Threat:** Computers can be damaged by dust, water, heat, fire, or careless handling.

**Safeguard:** Keep equipment clean, store it properly, and follow laboratory safety rules.

## ***Data Loss***

**Threat:** Important files may be accidentally deleted or corrupted.

**Safeguard:** Create regular backups and store copies in safe locations or cloud storage.

## ***Internet Threats***

**Threat:** Phishing, online scams, and malicious websites can steal personal information.

**Safeguard:** Verify websites, avoid suspicious links, and educate users about online safety.

## ***Human Errors***

**Threat:** Mistakes such as improper shutdown, deleting files, or incorrect settings can cause problems.

**Safeguard:** Train users, follow procedures, and confirm actions before making major changes.

### ***Software Piracy***

**Threat:** Using illegal software may expose computers to malware and legal problems.

**Safeguard:** Use licensed software from trusted sources.

### ***Environmental Hazards***

**Threat:** Floods, lightning, earthquakes, and fires can destroy ICT equipment.

**Safeguard:** Install fire extinguishers, lightning protection, and prepare disaster recovery plans.

**Conclusion:** ICT equipment is valuable and must be protected from physical, electronic, environmental, and human-related threats. Following appropriate safeguards helps ensure the security, reliability, and long life of ICT resources.