جامعة بيشة
University of Bisha
كليـــة الهندســـة

دليـــل السلامـــــــة

SAFETY MANUAL

يُعدّ دليل السلامة هذا وثيقة إرشادية لكلية الهندسة ويتضمن معلومات تُحدد مسؤوليات وأدوار الأقسام والأفراد لضمان السلامة العامة لجميع الطلاب والموظفين ويتحمل كل موظف وطالب وعضو هيئة تدريس مسؤولية الالتزام بالقواعد الواردة فيه.

This safety manual is a guiding document for the college of engineering, that contains information lays responsibilities and roles of departments and persons to ensure the general safety of all students and employees. Each employee, student, and faculty member are responsible for adhering to the rules included herein.

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1. Introduction

The Educational Equipment and Laboratories Unit at college of engineering in university of Bisha has established a safety manual that outlines the essential general safety procedures and guidelines to be followed by all personnel working in the Engineering Laboratories. Adherence to these guidelines is crucial to prevent accidents and ensure a safe working environment. As part of your introduction to the laboratory, before starting experiments in the department labs, laboratory user must review this manual with instructor, be familiar with its contents, and keep it handy for reference.

2. Overview

2.1. Public Safety

Identifies public safety risks, in addition to describing and enforcing the safety responsibilities for members of the university community and visitors to university-owned or -occupied property.

2.2. Objectives of Educational Equipment and Laboratories Unit

The Educational Equipment and Laboratories Unit. sets out to achieve its main goals of Public safety by implementing the following objectives:

- Establish:
  - ✓ A primary contact with local and state officials (i.e. fire department, fire marshal)
  - ✓ An environment that's free from the threat of physical harm, property damage and disruptive activity.
- Provide:
  - ✓ Safety rules and procedures
  - ✓ Fire prevention and safety services.
  - ✓ Campus-wide Emergency Response Planning
  - ✓ Personal protective equipment for technicians and workers
  - ✓ Training and awareness programs related to environmental health, compliance, and safety.
- Manage & Maintain:
  - ✓ Proper lighting
  - ✓ Laboratory safety
  - ✓ Environmental compliance
  - ✓ Firefighting and fire alarm equipment
  - ✓ Indoor air quality
  - ✓ The application of safety rules and procedures to everyday campus life.
- Conduct:
  - ✓ Periodic safety audits
  - ✓ Ventilation system test and balance
  - ✓ Safety data collection, analysis, and sharing
  - ✓ Personal protective equipment evaluations and training
  - ✓ Training and awareness seminars for the college of engineering community

- ✓ Fire drills & fire safety training with hands-on fire extinguisher training
- ✓ Mechanical and electrical systems preventive and corrective maintenance.

3. Responsibilities

The Educational Equipment and Laboratories Unit cannot do it alone. All have to do their part. Safety of any institution is not the responsibility of a designated individual, group, or department. It is a shared responsibility where everyone plays his/her role in realizing the ultimate goal: a safe, healthy, and enjoyable learning and working environments for all.

4. Safety Equipment

4.1. First Aid Kits & Medical Help

For minor injuries, First Aid kits are available inside every lab and workshop. The kits are stocked with band aids, sterilizer pads, bandage rolls, medical adhesive tape, etc. and are periodically checked and refilled.

In case further help is needed, the Medical Clinic is available all day long to offer services to the university public. The Clinic is staffed with a nurse and an Emergency Room doctor. In case of a medical emergency, students and employees are directed to call for an ambulance at the numbers listed at the beginning of this document.

4.2. Emergency Lights and Signs

As the main electric system may get damaged during a fire, escape pathways, exits, and exit signs are be lit using separate battery emergency lights that turn on when the power goes out.

4.3. Personal Protective Equipment

Personal protective equipment, "PPE", is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses resulting from contact with chemical, electrical, mechanical, or other workplace hazards. Such equipment may include items such as gloves, safety glasses, safety shoes, earplugs, hard hats, dust masks, vests, and overalls.

A. Safety Glasses, Goggles, and Face Shields

Tools and equipment that create chips, sparks, or dust present potential eye hazards. These types of eye hazards are generally controlled by Safety Glasses, Goggles, and Face Shields. Worker's eye/face protection must be regularly checked to make sure they are not broken or scratched, and are the correct type for the hazard. At a minimum, they must be worn by anyone using hand or power tools.

B. Safety Shoes

All technicians and cleaning staff are required to use overalls and safety shoes at all times, as they offer protection against falling items, and are slip resistant. In some cleaning applications, such as cleaning the fountains, workers may use rubber knee-high boots, to further protect them from acids and other solutions and chemicals.

C. Hard Hats/Safety Helmets

Hard hats are required when working in areas where there is a potential for injury to the head from:

- Falling objects.
- Bumping into structures, pipes, etc.

General Hard Hat Care:

- A hard hat must be replaced if it sustains an impact, even if signs of damage are not visible.
- Hard hats should not be:
  - ✓ Altered for any reason as these alterations may lower the intended level of protection.
  - ✓ Exposed to extreme temperatures for prolonged periods of time.
  - ✓ Drilled for added ventilation.
  - ✓ Stored in direct sunlight.
  - ✓ Worn with the shell tilted to one side.

D. Gloves

As different types of gloves offer varying protection against different hazards, careful selection must be made to properly suit the application.

- Disposable latex or vinyl gloves: good for protection against infections
- Rubber gloves: offer good protection against many chemicals
- Leather gloves: protect hands from sharp objects, friction, splinters, and welding.
- Insulated gloves: protect against scolding hot and cold temperatures
- Electrical safety gloves: provide electrical safety applications of up to 36,000 volts and protection against cuts, abrasions and punctures

E. Safety (High Visibility) Vests

Reflective safety vests are required for technicians working in construction sites, traffic areas, and during emergency response.

F. Earmuffs & Earplugs

Noise is an occupational hazard that can affect workers' hearing and cause numerous health problems and diminish the quality of work. The basic PPE for protecting from noise are earmuffs and earplugs.

Earmuffs should totally cover the ears, fit tightly, and have no gaps around the seals. Hair, glasses, hats, etc. shall not interfere with the seal. Seals and insides should be kept clean. Headband should not be overstretched as the tension is crucial to protection.
Earplugs go right in the ear canal, not just across it. Operators should practice fitting them, clean hands before handling them, and should not share them. Some types are single use, others can be re-used and even washed.

4.4. Fire Alarm System

A fire alarm system is a system designed to detect, alert occupants, and alert emergency forces (if so equipped) of the presence of fire, smoke, carbon monoxide, or other fire-related emergencies. Fire alarm systems may include smoke detectors, heat detectors, and manual fire alarm activation devices (pull stations). All components of a fire alarm system are connected to a fire alarm control

panel (FACP).

A fire alarm uses various technologies to detect fires. Smoke detectors for example are meant to alert you as quickly as possible to a smoke or fire emergency. Photoelectric smoke detectors on the other hand are ideal for detecting smoke from smoldering fires. Ionization smoke alarms detect smoke from fast, flaming fires. For best protection, all types of detectors should be used. Once a fire is detected, the alarm sounds its sirens informing people of the danger and signaling to leave the premises. Strobe lights are also used to visually signal the presence of an alarm. In case the alarm does not automatically go off, one can set off the alarm manually by using a pull station. In addressable systems, the FACP actually tells the location of the tripped pull station or the detector detecting the fire.

FACP should be checked regularly to clear any faults that may appear. A service tag shall be placed at each FACP detailing checkup and service history.

A. False Alarm

As a false alarm may be caused by a dirty detector, bad installation, faulty equipment, etc. it is essential to rely on reputable trustworthy contractors to properly install the system, and on well-trained technicians to maintain it periodically.

False alarms may also be caused by people intentionally setting the alarm off without due cause. Due to its impact on everyone's safety, tempering with fire alarm equipment is a serious offense that will subject offenders to disciplinary or even legal action, especially if the tempering results in serious injury or harm.

When the fire alarm goes off:

- Take the fire alarm seriously every time
- Assume it is a real alarm, and evacuate the building
- Wait for further instructions

B. Fire Fighting System

B.1 Principles of Fire

Solids and liquids do not burn. Gaseous substances pyrolyzed (decomposed from a solid material through heating) actually burn and not the solids themselves. Equally, vapors at the surface of a liquid are actually what burn, not the liquids themselves.

For a fire to burn, three components must be present:

- Fuel: solids, liquids, gases, oils and fats; practically everything may be fuel to a fire.
- Heat: acts on a fuel to start a chemical reaction that produces the needed flammable vapors.
- Oxygen: a fire must have oxygen to burn and will not burn with it.

Obviously, removing one or more of these components from the equation, will immediately extinguish the fire. Below are some the ways to control these three components and ultimately extinguish the flames:

- Water:

- ✓ Has the most efficient cooling action and is best for Class A fires.
- ✓ May spread the liquid and worsen the situation with Class B fires.
- ✓ Can cause an explosion with Class C fires.
- ✓ Can lead to electrocution with Class E fires.
- ✓ Will cause a violent reaction with Class F fires

- Powder:
  - ✓ Smothers fires by forming a barrier between the fuel and the source of oxygen.
  - ✓ As powder is an efficient cooling agent, there is a small chance that fires may reignite.
  - ✓ The chemicals in the powder react with the fire producing CO_2, a noncombustible gas, creating a barrier between the fire and oxygen.
  - ✓ Can be used on electrical panels of up to 1000 V
- Gas (CO_2):
  - ✓ CO2 is stored in cylinders as a liquid under high pressure.
  - ✓ When released:
    - It expands into a very cold gas that cools the fire.
    - It smothers the fire by displaces the oxygen near the fire as CO2 is heavier than oxygen.
- Foam:
  - ✓ Foam smothers the fire by forming a blanket over the burning liquids (or solids) depriving them of needed oxygen.

Below is a summary of firefighting materials and their applications:

	Solids	**Electrical Equipment**	**Flammable Liquids**	**Flammable Gases**	**Oils & Fats**
Water	✓	×	×	×	×
Powder	✓	✓	✓	✓	×
Gas	×	✓	✓	×	✓
Foam	✓	×	✓	×	×

B.2 Fire Extinguishers

Portable, manually operated, fire extinguishers are the most common method of extinguishing a fire. Timely reaction to a developing fire prevents incidents from developing into large-scale disasters. When fires become uncontrollable by this method, fixed fire suppression systems should be activated. A service tag shall be placed on each Fire extinguisher detailing routine checkup history.

When To Use

Use a portable fire extinguisher when:

- The fire is confined to a small area, for example a trash bin
- The fire is not spreading.
- The area has been cleared of people.
- The room is not filled with smoke.

What To Use:

Various types of fire extinguishers exist based on the fuel source of the fire which are classified as:

- Class A: Fires involving solid, usually organic, materials.
- Class B: Fire involving flammable liquids (e.g. alcohol) or liquefiable solids (e.g. rubber, wax,)
- Class C: Fires involving gases (e.g. methane, propane, …)
- Class D: Fires involving metals (e.g. magnesium, lithium, …)
- Class E: Fires involving electric equipment.
- Class F: Fires involving cooking oils and fats.

How To Use:

- Hold the extinguisher upright and pull the pin
- Aim the nozzle at the base of the fire, not the top of the flame.
- Squeeze the trigger to release the firefighting agent
- Sweep the nozzle from side to side

B.3 Water Hose Cabinets

A standby fire hose is required on every floor of every building. Water hoses have a standard length of 30m with the water stream reaching up to an additional five to seven meters. Water hoses shall be kept stowed in a Dutch-rolled position and housed in special cabinet. Typically located in easy to access areas, individuals can use them to combat Class A fires. Water hoses should never be used to fight electrical or oil and grease fires. When utilized appropriately, the fire hose effectively cools down the burning material below its ignition temperature and thoroughly saturates the materials, preventing re-ignition. The water hose must be inspected for wear or damage regularly and after each use. Valves and nozzles should regularly be inspected for leaks and maintained properly. A service tag shall be placed on each cabinet detailing routine checkup and service history.

B.4 Fire Suppression Systems

A fire suppression system is an active automatic system that tries to detect and fight fires before they get the chance to spread and get out of control. Upon detecting heat, a sprinkler system is activated causing the area to be doused the area with water (or other firefighting agents) to cool it down (in the case of water) and extinguish the fire. In some other instances, like computer labs or server rooms, the detectors will activate the deployment of CO_2 or other gases (FM200 for example) that will extinguish the fires as previously explained. In kitchens, foam may be deployed automatically to fight grease and oil fires.

The water sprinkler system is tied to water pumps via a network of pipes where water is kept under pressure. In FM200 systems for example, the gas is kept under pressure in liquid form in special tanks. FM-200 fire suppressant does not displace oxygen and therefore is safe for use in occupied spaces without fear of oxygen deprivation. As the gas comes in contact with the fire, a chemical reaction occurs reducing the temperature of the burning material, hence extinguishing the fire. The

gas is dispensed as a colorless electrically non-conductive vapor. The dispensed gas is clear, does not obscure vision, and leaves no residue. An FM200 system is the fastest fire protection and fire extinguishing system available. When fire is extinguished this quickly (within seconds), it means less damage, lower repair costs, and an extra margin of safety for people.

5. Environmental Safety Guidelines

5.1. Safe Comfortable Lighting

Poor lighting can lead to eyestrain, fatigue, headaches, stress, and accidents from trips and falls. On the other hand, too much light can also cause safety and health problems such as “glare” headaches and stress. Both can lead to mistakes at work, poor quality, and low productivity.

Light bulbs come with a lumen rating, whereas light intensity in a room is measured in Lux. 1 Lux is the illumination of a one-meter square surface that is one meter away from a single candle. Hence the equation:

1 lux = 1 lumen/m^2.

Below are typical light levels in typical work areas:

- Hallways/Toilets: 80 Lux
- Kitchens: 100 Lux
- Corridors, Lobbies, Staircases: 200 Lux
- Office, classroom: 300 - 500 Lux

To properly illuminate a room, using the typical values above as a guide, multiply the number of bulbs by the sum of the lumens of all the bulb, and divide that number by the total area (in m^2). To light up a 20 m^2 office with 400 lux using a number (x) of 4000 lumens lights,

E = 400 = x*4000/20 hence x = 2 meaning

The above equation means that we need two 4000 lumen lights.

The actual lux will be slightly less than 400 as the surface to be illuminated is more than 1 meter away from light source.

Light comes in different colors, also known as temperatures, measured in degrees Kelvin. Suitable lighting color temperature influences occupant's mood. For higher productivity, bright white, i.e. high temperatures, increases people's enthusiasm and hence is best suited for classrooms, exam rooms, and offices. Warm colors, i.e. lower temperatures, foster a sense of coziness and comfort, and are best suited for break rooms and lounges.

Common illuminance-level mistakes that should be avoided:

- Over-lighting or under-lighting a space.
- Using the wrong color temperature for the lighting fixtures.
- Placing light fixtures too close or too far from the surface.

For most comfortable glare-free lighting:

- Make sure rooms are not too dark nor too bright.

- Maximize the use of natural light.
- Use shades.
- Avoid shadows.
- Reposition lighting fixtures and workstations/desks
- Ensure regular cleaning and maintenance of lights, windows, and shades.

In case of fire or smoke, visibility gets poorer, and hence the importance of proper lighting in all areas, especially escape routes, stairs, and exits.

5.2. HVAC

Workplaces that are too hot or too cold can be a risk to employees' health and safety if not properly controlled. Employees may feel less alert, tired, ill, or having other medical conditions. Optimum comfort for office work is between 18°C and 24°C, depending on the time of year, clothing, and personal human factors.

Equally important to the room temperature, is ventilation of the workspace. An inadequately ventilated office environment or a poorly designed ventilation system can lead to the buildup of a variety of indoor air pollutants which adversely affect the occupants' health and wellbeing. The ventilation system should introduce an adequate supply of fresh outside air into the office and capture and vent pollutants to the outside. A general guideline of 20 cubic feet of outside air per minute/per person for an office environment. This is a sufficient amount of air to dilute building contaminants and maintain a healthy environment.
To ensure optimal system performance and minimal energy costs, ventilation filters must be periodically cleaned and replaced as needed.

A. Construction Dusts

The public must be protected against hazardous construction dusts, as regularly breathing such dusts can lead to serious diseases like lung cancer, asthma, Chronic Obstructive Pulmonary Disease (COPD), and silicosis. These diseases cause permanent disability and early death. COPD means that the lungs have been gradually and permanently damaged, making for poor quality of life. COPD develops slowly, with 15% of COPD cases caused by exposures at work. To protect workers from construction dusts, proper respiratory, eye, and face protection must be used. As for COPD:

- Smoking is the major cause of COPD. It makes work-related COPD worse.
- Workplace substances that cause COPD may also worsen a person's asthma.
- Construction workers in particular are at a higher risk of developing these diseases.

Examples of construction tasks that produce harmful dusts are:

- Cutting paving blocks, tiles, etc.
- Chasing concrete and raking mortar
- Cutting roofing tiles
- Scabbling or grinding
- Cutting and sanding wood
- Sanding taped and covered plasterboard joints

B. Noise

Noise in the workplace is an occupational hazard that can not only affect workers' hearing, but also can cause fatigue, stress, trouble sleeping, cardiovascular disorders, and diminish the quality of work. Certain noise levels can affect concentration, hinder verbal exchange, or prevent workers from perceiving warning signs. Sensitivity to noise varies amongst individuals. Noise pollution emanates mainly from lawnmowers and lawn trimming equipment. Other noise sources include hammer drills used to break asphalt or concrete during installations or service of underground installations. Hearing damage caused by exposure to noise is permanent and incurable. As hearing loss is often gradual due to prolonged exposure to noise, operators of loud machinery or equipment must wear hearing protection whenever in noisy environment. Hearing is at risk from a level of 80 decibels during an 8-hour working day. If the instantaneous level is extremely high (over 135 decibels), any exposure, even of very short duration, is dangerous.

C. Cleaning & Chemical Products

Cleaners, sanitizers, and disinfectants are defined as follows:

- Cleaners remove dirt through wiping, scrubbing or mopping.
- Sanitizers contain chemicals that kill bacteria on surfaces. They are not intended to kill viruses. Areas, like toilets and food preparation areas, require cleaning with the use of sanitizers.
- Disinfectants contain chemicals that destroy or inactivate bacteria, viruses, and microorganisms that cause infections.

6. Equipment Safety Guidelines

6.1. Electrical Appliance Safety

Although electricity can severely injure people and cause damage to property, simple precautions can be observed when working with or near electricity and electrical equipment to significantly reduce its risks. The main hazards of working with electricity are:

- Electric shock and burns from contact with live parts
- Injury from exposure to arcing (when electricity jumps from one circuit to another)
- Fire from faulty electrical equipment or installations
- Explosion caused by unsuitable electrical apparatus
- Static electricity igniting flammable vapors or dusts.

6.2. General Electric Safety rules

- Trailing cables that can cause people to trip or fall must be properly hidden.
- Electrical appliances must be switched off and unplugged before getting serviced.
- Electrical equipment should be properly connected, grounded and in good working order.
- Extension cords may not be used as permanent wiring and should be removed after temporary use for an activity or event.
- High amperage equipment such as space heaters, boilers, etc.
  - ✓ Must be announced to the Facilities Unit to ensure that outlets can properly handle the

high amperage and will not melt causing fires and other hazards.

- ✓ Must be plugged directly into permanent wall outlets.
- ✓ Must be turned off at the end of the day.

- As wet environments can increase the risk of an electrical shock
  - ✓ Computers must be placed on computer stands and off the ground
  - ✓ Loaded/connected extension cords must not be left lying on the floor.
  - ✓ Permanent connections must be properly mounted on walls.
- Equipment should be properly grounded, providing an alternate path for electricity to follow, rather than going through a person.

6.3. General Machine Safety Precautions

- Make sure electrical connections are secured and earthed.
- Student should use the correct tools and work holding devices recommended for the process.
- Tool should be clamped correctly. An overhanging tool may cause catastrophic failure of the tool, work piece or the machine tool.
- Not touch a job piece with bare hands while doing inspection or removing it from the machine. Use gloves always.
- Use recommended coolant solutions during cutting and machining processes.
- Immediately reshape the tools when producing rough surfaces on the job piece or produces chatter during machining processes.
- Don't increase the cutting speed than recommended ones when running the machines.
- It may produce vibrations and chatter and damage job piece, tool, or both.
- In case of power failures, switch off the machine and retrieve tool from the workpiece.
- Wear goggles to protect eyes from flying chips.
- Stop machine before attempting to clean, removing tool or workpiece.
- Always use the face of the grinding wheel that is meant for grinding.
- Machine should be stopped before making measurements or adjustments.
- Not operate the machine tools until you know the proper procedure or reading the manuals.

6.4. General Workshop Safety Precautions

- Never attempt to remove chips or cuttings with your hands or while the machine is operating. Use a brush.
- No matter how minor the injury may appear, report it to your instructor.
- Arrange sharp-pointed tools on the bench in a way that they will not injure you when you reach to pick them up.
- Don't block fire exits.
- Never smoke in no smoking area.
- Avoid spillage of flammable liquids and spills should be cleaned up immediately.
- Report defective electrical equipment if found.
- Student should not operate the hammer unless its head is tightly fixed to the handle.

- Place the hammer on the bench carefully. A falling hammer can cause serious foot injuries.
- Student should use the correct tip of screwdrivers while screwing. Too narrow or too wide tip will damage the work.
- Student should not use a file without a handle.
- Files are highly brittle and should never be used as a hammer otherwise the file will break.
- Always wear safety goggles while using a hacksaw.
- Be sure the hacksaw blade is properly tensioned.
- Do not brush away chips with your hand; use a brush.
- Never test the sharpness of a blade by running your fingers across its teeth.
- Keep saw blades clean and use light machine oil on the blade to keep it from overheating and breaking.

7. Safe Work Permits

A safe work permit is a document that authorizes some person or persons to carry out specific work activity after potential risks have been evaluated and mitigated. It serves to ensure that workers are aware of the potential hazards and of the precautions that must be taken into consideration. Such permits help prevent accidents, maintain compliance with regulations, and protect the health and safety of employees and the surrounding environment, as well as protect the university, workers, and contractors from liability and loss.

The permit-to-work process typically involves the following steps:

- Identification of the work to be carried out.
- Assessment of the associated risks and identification of necessary control measures.
- Development of a safe work procedure or method statement.
- Completion of a permit-to-work form or document.
- Authorization from the designated authority responsible for issuing permits.
- Implementation of the necessary controls and safety measures.
- Regular communication and coordination between different parties involved in the task.
- Closure of the permit once the work is completed and verified as safe.

The Project Manager or the Safety Supervisor may periodically check the work and job site to ensure the contractor's compliance with the requirements of the permit.

A number of work permits is discussed below.

7.1. Hot Work Permit

Hot Work is defined as cutting, welding, and soldering operations for construction, demolition, maintenance, and repair activities. The types of equipment used in these operations can introduce significant fire hazards into university buildings. The hot work permit provides a check list for hot work fire safety and serves as a reminder to contractors of their fire prevention responsibilities before, during, and after any hot work is conducted.

7.2. Working at Heights Permits: Mitigating Fall Risks

Working on construction sites often involves working at great heights, from which a fall can mean

certain death or real grave injury. To protect workers, obtaining a Working at Heights Permit is essential. This permit outlines the necessary precautions, equipment, and safety measures that must be taken to ensure the safety of workers who are working above ground.

7.3. Electrical Work Permits: Safeguarding Against Electrocution

Electricity is a crucial element in construction, but it can also be dangerous if not handled properly. Electrical Work Permits establish guidelines for de-energizing circuits, testing for live wires, and wearing personal protective equipment to ensure electrical safety.

7.4. Machine and Equipment Operation Permits: Ensuring Safe Operation

Heavy machinery is crucial in construction, but improper use can result in disastrous consequences. Machine and Equipment Operation Permits provide guidelines for safe operation, including operator qualifications, maintenance checks, and safety protocols.

8. Incident Reporting

All accidents and incidents, including injury, fire, dangerous occurrences, and near misses, must be reported without delay to the HEAPS Dept. The purpose of this reporting is to ensure that incidents are recorded and investigated, and that needed actions are identified, and performed, if possible, to prevent their recurrence. It is therefore crucial that people report incidents quickly, especially those that may involve the following:

- Near Misses: Any dangerous occurrence that could have resulted in a serious injury or fatality. Even though no observable injury, illness, death, or property damage have occurred, the information obtained from such reporting can be extremely useful in identifying and mitigating problems before they result in actual personal or property damage.
- Incidents:
  - ✓ Any accident to a student, visitor, employee, or member of the public as a result of work activities.
  - ✓ Any death occurring as a result of work activities
- Events: Incidents not involving injury or illness, but resulting in property damage.

9. General Safety Guidelines

9.1. General Safety Precautions

- You are responsible for your own safety and the safety of others.
- Most accidents are preventable by using common sense and thinking safety first.
- Keep your work area clean and free of hazards.
- Always follow agreed upon rules and procedures.
- Always wear proper protective safety gear.
- Do not tamper with fire alarm or firefighting equipment or disable emergency doors.
- Familiarize yourself with locations of fire extinguishers, emergency exits, escape routes, and emergency assembly points.
- Do not take shortcuts and always follow safety rules & procedures.

- Adhere to properly using the right tools & equipment.
- Don't use materials and equipment without prior training.
- Don't use materials and equipment without prior authorization.
- Promptly report all hazards and unsafe conditions to the nearest Safety Officer
- Refrain from horseplay and always be vigilant and prepared.
- Familiarize yourself with the location of the fire exits and fire extinguishers.
- Learn of the various types of fire extinguishing materials and their uses.

9.2. Common Causes of Injuries

- Standing on or climbing onto furniture.
- Tripping on open drawers, cables, or things left on the floor.
- Blocked or Cluttered pathways.
- Spills and wet or sticky floors.
- Objects poorly stored in high places.
- Falling cabinets and other furniture.
- Improperly lifting heavy objects.
- Using unauthorized electrical appliances.
- Using improper/unoriginal electrical plugs and/or overloading them.
- Sitting at the desk for extended periods without a break.
- Not knowing nor complying with general safety procedures.
- Not paying attention to your surroundings.

9.3. Infectious Diseases

To limit the spread of infections, adhere to the following common-sense rules:

- Cover your mouth with a tissue when coughing or sneezing
- Wash your hands regularly with soap for at least 20 seconds
- Do not touch your eyes, nose, or mouth before washing your hands
- Avoid people exhibiting flu-like symptoms
- Avoid crowded places as much as you can and use a medical mask when in such places
- When exhibiting symptoms of the flu:
  - ✓ Seek medical help As Soon As Possible
  - ✓ Use a medical mask
  - ✓ Avoid hugging/kissing people
  - ✓ Avoid shaking hands with everyone you meet

10. Fire Evacuation Plans

10.1. Emergency Evacuation

Become familiar with your work area and exit locations in advance of an emergency. Always know at least two ways out of a building. If a fire alarm sounds, prepare to evacuate immediately.

- Don't panic, keep calm, and do not run nor hide.
- Do not take any unnecessary risks.

- Do not go back to collect your belongings.
- Walk in a single file. Stay to the right when walking through corridors and stairwells.
- Avoid stopping and talking to others and keep the lines moving.
- Individuals requiring assistance should proceed to a stairwell entrance area and wait for assistance.
- When approaching a closed door, feel the door with the back of your hand. If the door is cool, carefully open the door and, if safe, proceed with the evacuation.
- In case of heavy smoke, crawl on the floor.
- Take the stairs and do not use the elevators.
- Safely exit the building using the nearest exit.
- In case of a fire, don't use fire extinguishers unless you are trained on using them.
- Head to the designated assembly point and remain there until you are authorized to go back inside.
- Inform authorized personnel of location of fire or smoke.

10.2. Procedures for Faculty Members

- Locate all exit routes, secondary exit routes, and assembly areas.
- During the first week of class or when a new student transfers to the class, review the evacuation plan, routes, and assembly area with the students.
- In the event of an alarm, escort/lead students out of the building and report to the assembly area.
- Upon arrival at the designated assembly area, account for your students and report any missing students to the building supervisor.

10.3. Procedures for Staff/Contractors/Other Employees

- Locate all exit routes, secondary exit routes, and staging areas.
- In the event of an alarm, immediately leave the building and report to the assembly area.
- Managers and department heads are responsible for designating a person to be responsible to account for the persons in their department or area in the event that an emergency evacuation must occur. This person will take a head count and report any unaccounted-for individuals to the floor supervisor.
- In the event of a fire alarm, building/floor supervisors shall perform a sweep of their area to ensure that, all visitors and contractors are escorted out of their area of control and direct them to the designated assembly areas, to await instructions from emergency responders. If any individual is not accounted for, such findings shall be reported immediately to the general supervisor.