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University of Al Maarefa
College of Applied Sciences
Respiratory Care Department

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LAB SAFETY MANUAL

Laboratories can be a dangerous place to work. But, the potential for injury from these dangers can be minimized if you are aware of and follow proper safety procedures.

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Introduction

Good common sense is needed for safety in a laboratory. It is expected that each lab attendant will work in a responsible manner and exercise good judgment and common sense. An Unknown Author said about safety: ''Prepare and prevent, don't repair and repent.'' This summarizes our aim from this manual.

Lab Values:

1. Safety, it is in your hand.
2. Responsibility, it is in your actions.
3. Awareness, it is in your mind
4. Respect, it is in your words
5. Elegance, it is in your personality

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Lab General Rules

- Never work alone in laboratory.
- Never eat, drink, or smoke while working in the laboratory.
- Never pipette anything by mouth.
- Wash hands before leaving the lab and before eating.
- Cell phones and use of music headphones should be avoided while working in the lab. They can be distracting and thereby increase the potential for an accident to occur. They can also become contaminated if handled while working with hazardous materials.

Dress Code:

Employees working in laboratories must:

- Wear closed-toe shoes
- Wear long pants or skirts which fully cover the legs and a lab coat.
- Confine long hair
- Secure loose clothing and jewellery before beginning work.

Each department or laboratory will determine required additional personal protective equipment (PPE) such as gloves and eye protection appropriate for working with specific materials.

Lab Logistics:

- Keep your lab space clean and organized.
- Maintain unobstructed access to all exits, fire extinguishers, electrical panels, emergency showers, and eye washes.
- Keep bags in one place recommended by the lab manager.
- Do not store heavy items above table height. Any overhead storage of supplies on top of cabinets should be limited to lightweight items only.
- Turn off all ignition sources and lock the doors if leaving a lab unattended.
- No student may work in laboratory without the presence of the teacher.

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Equipment handling:

- Read labels carefully.
- Do not use any equipment unless you are trained and approved as a user by your supervisor.
- If at any time you are not sure how to handle a particular situation, ask your instructor for advice. **DO NOT TOUCH ANYTHING WITH WHICH YOU ARE NOT COMPLETELY FAMILIAR!!!** It is always better to ask questions than to risk harm to yourself or damage to the equipment.

Dealing with Accidents

- Equipment Failure - If a piece of equipment fails while being used, report it immediately to your instructor. Never try to fix the problem yourself because you could harm yourself and others.
- Report any accident or injury to the teacher immediately, no matter how trivial seems. Do not panic.
- Incident report should be written in case of any injury, equipment failure, and any problem that might put safety in danger.

Safety equipment:

- PPE
- Fire extinguishers
- Sand Bucket
- Fire Blankets
- Safety Symbols
- First Aid Kit
- Ground-fault interrupter electrical outlets
- Container for broken glass and sharps
- Fire detection or alarm system
- Telephone

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Electrical safety

- Examine all electrical cords periodically for signs of wear and damage. If damaged electrical cords are discovered, unplug the equipment and have it repaired.
- Properly ground all electrical equipment.
- If sparks are noticed while plugging or unplugging equipment or if the cord feels hot, do not use the equipment until it can be serviced by an electrician.
- Do not run electrical cords along the floor where they will be a tripping hazard and be subject to wear. If a cord must be run along the floor, protect it with a cord cover.
- Do not run electrical cords above the ceiling. The cord must be visible at all times to ensure it is in good condition.
- Do not plug too many items into a single outlet. Cords that enable you to plug more than one item in at a time should not be used.
- Multi-plug strips can be used if they are protected with a circuit breaker. Do not overuse or daisy-chain in a series.
- Do not use extension cords for permanent wiring. If you must use extension cords throughout the lab, then it is time to have additional outlets installed.
- Do not leave the not used cords plugged into electricity outlets. Make sure to unplug it before leaving the Lab.

Mechanical safety

1. When using compressed air, use only approved nozzles and never directs the air towards any person.
2. Guards on machinery must be in place during operation.
3. Exercise care when working with or near hydraulically- or pneumatically-driven equipment. Sudden or unexpected motion can inflict serious injury.
4. Deal with Cylinders following these steps:

- Secure Cylinder cart with chain
- Remove Cylinder Cap.
- Crack cylinder valve by turning valve handle counter clockwise sharply and return to the off position.
- Position valve away from you and others when cracking it.
- Attach regulator with proper CGA fitting.
- Transport Cylinders with care.
- Leave cylinders in stand and stand cart up straight, have wheels down flat.
- Do not place cylinder to heat source such as heating system.

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Fire Fighting

RACE

1. **R**escue anyone in immediate danger of the fire, if you can do so safely.
2. **A**lert others and emergency services to fire, activate the building's fire alarm.
3. **C**ontain the spread of fire by closing doors and windows as you evacuate the building.
4. **E**vacuate to a pre-arranged safe place outside.

PASS

Pass summarizes the way you should use the fire extinguisher.

1. **P**ull the pin.
2. **A**im low and direct the hose nozzle at the base of the fire.
3. **S**queeze the lever above the handle to discharge the extinguisher agent.
4. **S**weep the nozzle from side to side at the base of the fire.

Only fight a fire if:

- The fire is small and contained.
- You are safe from toxic smoke.
- You have a means of escape.
- Your instincts tell you it's OK.
- You know how to use the fire extinguisher.
- You know what is burning.

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