LABORATORY SAFETY MANUAL

Kingdom of Saudi Arabia
Ministry of Higher Education
Shaqra University

LABORATORY SAFETY MANUAL

Department of Clinical Laboratory science
College of Applied Medical Sciences, Al-Quwayiyah
Shaqra University, KSA
2022/2023

Last update: March 2023

FOREWORD

A well-equipped laboratory is a prerequisite for an educational institute that can be run by formulation of certain rules and regulations. In order to assure an effective policies and guidelines, it is mandatory that all individuals associated with the College to conform to the policies and procedures set forth in this manual.

The Clinical Laboratory science laboratory contains a variety of safety hazards, many of which can produce serious injury or life-threatening disease. The knowledge acquisition of all this is imperative.

To work safely in this environment, laboratory personnel must learn the hazards that may exist, the basic safety precautions associated with them, and the application of basic rules of common sense required for everyday safety by passing them on to others working in the laboratory.

DR ABDULELLAH ALSOLAIS

Dean of the College
COLLEGE OF APPLIED MEDICAL SCIENCES, AL-QUWAYIYAH
SHAQRA UNIVERSITY, KSA

POLICY STATEMENT

This Laboratory Safety Manual describes policies and procedures that are required for the safe conduct of experiment and research at the Shaqra University.

It is the university policy to provide a safe working and learning environment. The College of Applied Medical Sciences, Al-Quwayiyah has developed this manual as a guiding set of principles with the institution-wide policies and procedures for the safe use of hazardous chemical and other material at the college. When these policies and procedures are acted upon, the risk of occupational exposures to chemicals and physical hazards as well as the risk of accidental environmental release of hazardous materials is minimized.

EMERGENCY CALL LIST

LIST	PHONE NUMBER
Dean’s Office	6959
Laboratory Head	0546678652
Fire Emergency	998
Police	999/ 911
Ambulance	997
Al-Quwayiyah General Hospital	0116521003

TABLE OF CONTENTS

INTRODUCTION 8

Scope 8

General Safety Guidelines & Rules 8, 9

SAFETY RULES 10

Dress Guidelines 10

Electrical safety 10

Water-Related Safety.....10

Laboratory Safety 11

Fume hoods 11

Chemical Storage Cabinets 11

Biological Safety Cabinets (BSCs) 11

PRACTICES FOR LABORATORY WORK 11

Chemical Hazards 12

Laboratory standard 12

Biological Hazards 12

Research Animals 12

Physical Hazards and Others 12

Safety Hazards 13

Autoclaves and Sterilizers 13

Centrifuges.....13

Electrical 13

Standard operating procedures (SOPs) 14

Eye Safety 14

Personal Protection 15

Laboratory Housekeeping 16

First Aid Measures 17

Fire 17

HEAT & FIRE 17

BIOLOGICAL HAZARDS: 18

CHEMICAL EXPOSURE 19, 20

RESPONSIBILITY 21

Laboratory Faculty Responsibility 21

Students' Responsibility 21, 22

INTRODUCTION

This manual is meant to promote and make laboratories clean and safe places to work and compliant with relevant legislation on health, safety and the environment. In an educational institution, the laboratory is considered to be an area where risks for injury can be seen. Medical laboratory and Clinical Laboratory science students, technicians and faculty could be exposed to numerous potential threats, including chemical, biological, physical and nuclear hazards. Good housekeeping, the use of the right instruments for the right work, the avoidance of risks, the cleanliness of the laboratory environment-all lead to safe service. Accidents should be identified to a member of the faculty as soon as possible and/or personnel-in-charge with laboratory**.** Any elements of risk are protected by all laboratory procedures. In experimental work, healthy working habits are needed.

Scope

This manual is applicable to students, laboratory faculty, visitors, and any individual entering the laboratory premises.

The present Laboratory Safety Manual describes policies, procedures, equipment, personal protective equipment, and work practices that are capable of protecting students and all users (including visitors) of laboratories at the College.

General Safety Guidelines & Rules

It is the responsibility of each person that enters the laboratory to understand the safety and health hazards associated with potential hazardous materials and equipment in the laboratory. It is also the individual's responsibility to practice the following general safety guidelines at all times. The following guidelines have been established to minimize or eliminate hazards in the laboratory to maintain a safe laboratory environment.

1. Never remove chemicals, biological agents, or radioactive materials from the facility without proper authorization.
2. Never perform any hazardous work when alone in the laboratory. At least two people should be present. The students must be supervised by an instructor at all times.
3. Chemical fume hood sashes should be kept closed whenever possible. Maintain the minimum possible opening when working. Do not store chemicals in fume hoods.
4. Food and drink should not be brought into, stored in or consumed in a laboratory.
5. Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in areas where specimens are handled.
6. Any Consumable/Eatables are not to be stored in refrigerators, freezers, cabinets, or on shelves, countertops, or bench tops where blood or other potentially infectious materials are stored or in other areas of possible contamination.
7. Even if you have been wearing gloves, always wash hands and arms with soap and water before leaving the work area:

    - After removing gloves.
    - After completion of work and before leaving the laboratory.
    - Immediately after accidental skin contact with blood or other potentially infectious materials.
    - Before all other activities which entail hand contact with mucous membranes or breaks in the skin.
8. Smoking is prohibited in the College, and Labs.
9. Appropriate eye protection should be worn, when using toxic chemicals or operating equipment.
10. Shoes that provide full coverage of the feet, and appropriate personal clothing should be worn in laboratories.
11. Visitors to the laboratory must observe all safety regulations, including, but not limited, to the wearing of eye protection.
12. All spilled liquids should be cleaned immediately.

13. Extinguishers, first aid kits, emergency eyewash stations and emergency showers, emergency power off, emergency telephones, and emergency exits.
14. Lab users should know the locations and operation of safety and emergency equipment such as fire.
15. Never open or remove the cover of any equipment in the laboratories. Furthermore, Laboratory should remain locked after regular office hours.
16. Do not physically contact any of the rotating components of the equipment present in the laboratory.
17. Do not use wet hand when using electrical items like switches or plugs.
18. Unauthorized person(s) will not be allowed in a laboratory. 'Authorized' students or any other individuals have to be under immediate and direct supervision of a faculty at all times.
19. Report all problems to the faculty and avoid misuse of equipment for purposes other than that for which they are intended.

SAFETY RULES

Dress Guidelines

1. Wear a full-length, long-sleeved laboratory coat or apron.
2. Wear disposable gloves, as provided in the laboratory, when handling hazardous materials. Remove the gloves before exiting the laboratory.
3. Always wear appropriate eye protection (i.e., chemical splash goggles) in the laboratory.
4. Secure long hair and loose clothing (especially loose long sleeves, neckties, or scarves) to avoid contact with flames or chemicals.
5. Avoid wearing shirts exposing the torso, shorts, or short skirts; long pants that completely cover the legs are preferable.
6. Wear shoes that adequately cover the whole foot; low-heeled shoes with non-slip soles are preferable. Do not wear sandals, open-toed shoes, open-backed shoes.

Electrical safety

1. Report to the lab instructor any items dysfunction for appropriate action to be undertaken.
2. All equipment should undergo regular electrical testing.
3. If equipment is to be left on for a specific reason, then a '**leave on**' sign should be displayed, with name and date.
4. Do not attempt to do any electrical repairs or investigations - refer your problem to the appropriate qualified staff.
5. Switch off all electrical equipment when not in use.

Water-Related Safety

1. If water is boiled for an experiment involving heat, make sure it is never left unattended. Remember, too, that the hot plate will stay hot well after it is unplugged or turned off.
2. Keep water away from all electronic equipment.
3. Keep water away from electrical outlets.

Laboratory Safety

Fume Hoods

All laboratory processes with chemicals must be performed in extracted wet bench. Fume hood should not be used for long-lived chemical storage. Fume hoods seize, hold, and exude discharge triggered by harmful chemicals or chemical processes.

As it is feasible to foresee the ejaculation of unwanted or harmful waste in most laboratory processes, rare things can occur most of the times. Hence, the extracted wet bench provides an additional computation of safety.

Chemical Storage Cabinets

Flammable materials should be kept in combustible material storage cabinets. Storage of flammable and corrosive chemicals in the lab should be restricted to small dosage as for as feasible. Abandoning chemicals on benches or working spot is riskier and is not feasible. Plastic shelf are fabricated for abrasion resilience and used for keeping solution and other abrasive materials. Acids and other abrasive chemicals or solutions are kept under fume hoods in the chemistry laboratory. Storage outside of the cabinet should be restricted to materials used in the prevalent operation and should be removed following use to the suitable storage shelf.

Biological Safety Cabinets (BSCs)

BSCs protect laboratory workers and the immediate environment from virulent small particulate matter like aerosols or PM evolved inside the cabinet. When used in addition to the use of suitable microbiological processes, properly maintained BSCs give a nice & suitable storage system for secure interpretation of impartial and high-risk infectious agents [Biosafety Level 2 (BSL 2) and 3 (BSL 3) agents].

PRACTICES FOR LABORATORY WORK

Lab procedures when used securely minimize the duration, frequency or severity of exposure to a hazard. It is a good idea for the faculties to ask students for their feedback when determining healthy lab practice controls, because they have first-hand experience with the assignments as actually performed. The students and staff need to understand and obey these procedures.

Examples are:

1. Mouth Pipetting should be avoided; and
2. Chemical replacement where feasible (e.g., selecting the less dangerous chemical for a specific procedure).

Chemical Hazards

Hazardous chemicals include cancer-causing agents (carcinogens), toxins (e.g., those affecting the liver, kidney, and nervous system), irritants, corrosives, sensitizers, as well as agents that act on the blood system or damage the lungs, skin, eyes, or mucous membranes including mercury

exposure. They present physical and/or health threats to the students and staffs in the laboratories.

Laboratory standard

The Laboratory standard applies to all individuals engaged in laboratory use of hazardous chemicals. The Laboratories at our college are following the laboratory standard and is to ensure that the students and staffs are informed about the hazards of chemicals in their workplace and are protected from chemical exposures exceeding allowable levels and it achieves the protection by establishing safe work practices in laboratories to implement a Chemical Hygiene Plan (CHP). The Laboratory standard specifically does not apply to formaldehyde use in Histo and Cytopathology and anatomy laboratories. Laboratory uses of chemicals which provide no potential for exposure (e.g., chemically impregnated test media or prepared kits for pregnancy testing) are not covered by the Laboratory standard.

Biological Hazards

Biological hazards are present in various sources throughout the laboratory such as blood and body fluids, culture specimens, body tissue and cadavers, and laboratory animals, as well as other workers. The laboratories encounter daily exposure to biological hazards. The agents and toxins that affect animal and plant health are also referred to as high-consequence livestock pathogens and toxins, non-overlap agents and toxins, and listed plant pathogens. The biological agents (e.g. viruses, bacteria, fungi, and prions) and toxins have the potential to pose a severe threat to public health and safety, to animal, or plant health, or to animal or plant products.

Research Animals

By using safe work practices and appropriate PPE, 29 CFR 1910.132(a), Staff can minimize the likelihood that they will be bitten, scratched, and/or exposed to animal body fluids and tissues. All procedures on animals should be performed by properly trained personnel.

Physical Hazards and Others

Laboratory workers can also be exposed to a number of physical hazards besides exposure to chemicals and biological agents. Some of the common physical hazards that they may encounter include the following: noise hazards, ergonomic, ionizing radiation, and non-ionizing radiation.

Safety Hazards

The PPA standards must be followed in handling the equipments. Examples of PPE which may be selected include using oven mitts when handling hot items, and steel mesh or cut-resistant gloves when handling or sorting sharp instruments as stated in the Hand Protection standard listed in OSHA.

The college must assess tasks to identify potential worksite hazards and provide and ensure that faculty & students use appropriate personal protective equipment (PPE) as stated in the PPE standard and also to use appropriate hand protection when hands are exposed to hazards such as sharp instruments and potential thermal burns.

Autoclaves and Sterilizers

To recognize the potential for exposure to burns or cuts, faculty and students should be trained. When removing them from autoclaves/ sterilizers or from steam lines that service the autoclaves, these burns or cuts can occur by handling or sorting hot sterilized items or sharp instruments.

Centrifuges

The majority of all centrifuge accidents are the result of user error. Centrifuges, due to the high speed at which they operate, have great potential for injuring users if not operated properly. Unbalanced centrifuge rotors can result in injury, even death. Sample container breakage can generate aerosols that may be harmful if inhaled.

Electrical

Electrical hazards include electric shock, electrocutions, fires and explosions. In the laboratory, there is the potential for faculty and students to be exposed to electrical hazards. A flexible

electrical cord may be damaged by door or window edges, by staples and fastenings, by equipment rolling over it, or simply by aging. Damaged electrical cords can lead to possible shocks or electrocutions.

The potential for possible electrocution or electric shock or contact with electrical hazards can result from a number of factors, including the following:

- Damaged receptacles and connectors;
- Unsafe work practices;
- Faulty electrical equipment/instrumentation or wiring.

Standard operating procedures (SOPs)

Standard operating procedures (SOPs) are developed to provide guidance for the safe handling of hazardous materials. SOPs include but are not limited to procurement, distribution, storage, labeling, equipment usage, general lab practices, and disposal and emergency procedure practices for the particular chemical, work or hazard group. Information about each chemical can be obtained using the material safety data sheets (MSDS), hazard labeling uniform adopted by laboratory such as National Fire Protection (NFPA) labeling, Hazardous Martial Identification System (HMIS). In a nutshell, they provide a detailed work practices in the laboratory.

Eye Safety

1. Do not use contact lenses in the laboratory unless absolutely necessary. Vapors and chemicals can get trapped under the lens and make it impossible to remove the lens to rinse the eye. Severe eye damage can occur. If they are worn, the supervisor must be informed so that special precautions can be taken.
2. Eyewashes should be flushed weekly and documented on eyewash tags.
3. Any laboratory users should know where the nearest eye wash station is located and how to operate it.
4. In the event of a chemical splash into an eye, it is often nearly impossible to remove the contact lens to irrigate the eye because of involuntary spasm of the eyelid.
5. Eye goggles should be worn:

a) When working in close proximity to ultra-violet radiation (light).
b) When performing procedures that are likely to generate droplets/aerosols of blood or other body fluid.
c) When working with reagents under pressure.
d) When working with certain caustic reagents and/or solvents, or concentrated acids and bases.

Personal Protection

Everyone, including visitors, must wear the appropriate eye protection where chemicals are stored or handled. Personnel (faculty, students and technicians) must be aware of the types of protective equipment available and use the proper type for each job. Appropriate Personal Protective Equipment (PPE) should be used where indicated:

a) **Protective eyewear** and/or masks may need to be worn when contact with hazardous aerosols; caustic chemicals and/or reagents are anticipated.
b) **Lab footwear** should consist of normal closed shoes to protect all areas of the foot from possible puncture from sharp objects and/or broken glass and from contamination from corrosive reagents and/or infectious materials.
c) **Gloves** should be worn for handling chemicals, blood or other biohazards.
d) **Lab coats** or disposable aprons should be worn in the lab to protect from contamination.

Protective equipment is required in order to keep Students and Staff safe while performing their Laboratory training. Respirators (for example, N95), face masks, goggles and disposable gloves are examples of PPE. While engineering and administrative controls and good work practices are considered more efficient in reducing exposure to many hazards in the laboratory workplace, the use of PPE in laboratory settings is also very significant.

It is important for PPE to be:

1. Ideally extracted, washed, disinfected and processed as reusable.
2. Removed and disposed of correctly to prevent contamination.
3. Periodically maintained and replaced in compliance with the requirements of manufacturer;
4. Worn conscientiously and correctly;

5. Correctly fitted and regularly refitted in some situation e.g. respirators;
6. Selected based on the risk employed.

Laboratory Housekeeping

The risk of accidents and exposure to hazardous materials can significantly be reduced by following good housekeeping practices. Spills and accidents are more likely to occur in cluttered work spaces.

Follow the laboratory housekeeping guideline as under:

1. Remove any equipment or clutter that interferes with access to emergency equipment such as eyewash stations, safety showers, and fire extinguishers.
2. Access to exits, emergency equipment, and utility controls shall never be blocked.
3. Doorways and walkways shall not be blocked or used for storage.
4. Floors and walkways should be maintained dry at all times.
5. Any spills or accumulations of chemicals on work surfaces shall be removed as soon as possible with techniques that minimize residual surface contamination.
6. Keep chemical waste containers closed.
7. Properly label chemical waste with specific contents. Keep label attached to the container at all times. Always replace old and deteriorated labels.
8. Regularly check glassware for star cracks, chips, or cracks, and promptly discard or repair any unsafe glassware.
9. Avoid accumulating large amounts of dirty dishes on lab benches and by sinks. Clean them when your experiment is done.
10. Put away any clean glassware that is not being used.
11. Lab areas (bench tops, hoods, etc.) are to be kept clean and uncluttered. This will help prevent spillage, breakage, personal injuries and unnecessary contact with chemicals.

FIRST AID MEASURES

1. Pull out and rinse polluted clothes with water. Pursue medical assistance as apposite.

2. If swallowed rinse out mouth with more amount of water provided the person is sensible.
3. If inhaled move to fresh air, if there is trouble in breathing give non-natural inhalation or oxygen.
4. In an instance of contact rinse pretentious area proximately with enough water while eliminating dirty clothing etc.

Fire

In dealing with a laboratory fire, all containers of infectious materials should be placed into autoclaves, incubators, refrigerators, or freezers for containment. Fire is the most common serious hazard that one faces in a typical laboratory. Laboratories, especially those using solvents in any quantity, have the potential for flash fires, explosion, rapid spread of fire, and high toxicity of products of combustion (heat, smoke, and flame). While proper procedures and training can minimize the chances of an accidental fire, laboratory faculty and students should still be prepared to deal with a fire emergency when it occurs.

HEAT & FIRE

Prevention of Accidents with Heat/Fire is possible by adopting the following measures:

1. Inflammable Liquids: Only small quantities of inflammable liquids such as ether, ethanol, acetone, benzene, toluene and carbon disulphide should be kept in the laboratory.
2. Test tubes: Never heat the bottom of a test tube. The liquid inside might sputter. Heat the middle of the tube, shaking gently. The mouth of the tube should be facing away from the worker and any other person, towards an empty space or a sink.

WARNING: Never place a bottle of ether on a workbench where there is an open flame (Bunsen burner, spirit lamp, etc.) Carbon disulphide is even more dangerous.
Ether will ignite at a distance of several meters from a flame.

While using Liquefied Petroleum Gas (LP Gas):

1. Always ensure that electrical wiring and electrical appliances are in good condition.

2. Do not use nylon clothes while working as these are easily inflammable. Always use a laboratory apron.
3. When lighting a gas burner, always light the match and hold it to the burner before turning on the gas tap. Turn off the main valves of all gas cylinders every evening. Replace the rubber connecting pipes once a year.

First Aid Measures in case of burns:

1. Inform the physician on duty immediately.
2. Wash the burned portion thoroughly with clean water.
3. Plunge the affected part into cold water or ice-water to soothe the pain.
4. Do not remove his clothing. Shift him/her to Casualty.
5. Apply silver sulphadiazine ointment to the burn.
6. Never scratch or tear off the blisters that form over the burns.
7. If the burn becomes infected or does not heal, refer the patient to a physician.

BIOLOGICAL HAZARDS:

It is essential to prevent the laboratory employees and students' exposure to infectious agents, such as the hepatitis virus (HCV/HBsAg) and HIV.

Exposure to infectious agents results from:

1. Cuts or scratches from contaminated glassware. Any unfixed tissue, including blood slides, also must be treated as potentially infectious material.
2. Centrifuge accidents.
3. Spraying of infectious material by a syringe or spilling splattering of these materials on bench tops or floors.
4. Accidental puncture with needles and sharps.

First Aid Measures in case of Accident with Biological Hazardous Material:

In Case Of Needle Stick Injuries Or Skin Exposure

1. In case of splash to mouth or eyes, rinse thoroughly with plenty of running water- check for and remove contact lenses – Don't use a disinfectant here.
2. Do not panic or put finger in the mouth – encourage bleeding by squeezing – wash thoroughly with soap under running water, followed by 70% alcohol (-> Report to the supervisor (Incident Reporting Form)
3. Blood samples will be taken for assessing basal status and the risk of transmission.
4. If the index case (patient) is HBsAg Positive, exposed employee's investigations are done and HBV immunoglobin, HBV vaccine (booster), reassurance and counseling are done accordingly.
5. If the index case is HIV Negative, HIV antibody testing of the exposed person is offered at 0,6,12 and 24 Weeks.
6. If the index case is HIV Positive exposure code and status code is evaluated and chemoprophylaxis is started within 1-2 hours following exposure. The cut off period for chemoprophylaxis is 72 hrs following exposure. All the routine investigations are to be done while starting chemoprophylaxis. Two or three drug prophylaxis is given depending on the category of exposure (Refer to specific SOPs)

CHEMICAL EXPOSURE

The Laboratory and safety committees can be consulted by the Laboratory Supervisor in any instance. If an overexposure to chemicals is suspected, report immediately to your supervisor. An exposure assessment must be performed by the supervisor.

Training is to be provided by the department in conjunction with laboratory supervisors.

The University requires that employees be informed of the presence of hazardous chemicals when assigned to a work area and prior to new exposure situations (i.e., those situations involving new hazardous chemicals and/or new work procedures).

Chemical Waste Disposal

1. Waste should be taken to the collection points on the morning of the scheduled pickup.

2. Waste chemicals are picked up from university buildings on a bi-weekly schedule. In the event of a University holiday falling upon a pick-up day, the pick-up will be rescheduled.
3. An orange Waste Chemicals label should be filled out completely & placed on the bottle.
4. All chemicals must be identified and labeled.
5. Labels should include chemical name, quantity, name of person preparing chemical for disposal, department, telephone extension, and date.
6. Consult the Material Safety Data Sheet for the materials to determine compatible groupings.
7. Waste chemicals destined for disposal should be segregated into compatible groups and packaged in a sturdy cardboard box.
8. List all known chemical constituents for each container (Do not label as "solvent waste", "aqueous waste", halogenated/non halogenated waste, etc.) Estimate concentrations.
9. Common chemical names should be used on labels. (No formulas or abbreviations).

First Aid in case of Accident with Chemicals

Accident from Acids like Nitric Acid, Sulphuric Acid, Hydrochloric Acid and Trichloroacetic Acids etc.

In All Cases: Wash Immediately And Thoroughly With Running Water.

1. In case of swallowing of acids drink plain cold water (3-4 glasses) and shift to patient to the casualty.
2. In case of acid splashes in the eye: Wash the eye immediately with large quantity of water sprayed from a wash bottle or rubber bulb. Squirt the water into the corner of the eye near the nose.

Accident from Alkali like - Sodium, Potassium, and Ammonium Hydroxide etc.

1. Squirt the water into the corner of the eye near the nose.
2. In case of swallowing alkalis give him 3 or 4 glasses of ordinary water and shift to the casualty.

3. In all cases: Wash immediately with large quantities of water In case of alkali splashes in the eye wash immediately with large quantities of water sprayed from a wash bottle or rubber bulb.

RESPONSIBILITY

It is binding on the faculty teaching the course (the instructor) to make sure that the procedures described in this document are implemented in true letter and spirit.

Laboratory Faculty Responsibility

1. A laboratory faculty member should provide adequate written instruction before the commencement of any laboratory activity that is accurate, appropriate to the situation, setting, and maturity of the audience.
2. The laboratory faculty should ensure written reports for maintenance/correction of hazardous conditions or defective equipment, which are used for any reason, are properly filed with responsible administrators.
3. The maintenance must ensure a safe environment for students and teaching staff.
4. The laboratory faculty should as well establish regular inspection schedules and procedures for checking safety and first-aid equipment, and follow all safety guidelines concerning proper labeling, storage, and disposal of chemicals. By properly keeping records of all hazard notifications and maintenance inspections, the faculty's liability in the event of an accident is tremendously minimized in cases where no corrective actions were subsequently made.

Students' Responsibility

As a mandatory procedure, the students are required to duly observe the **safe laboratory** rules as under.

1. Follow instructions - always perform experiments precisely as directed by the faculty.
2. Labeling – always check labels to verify substances before using them, and properly ensure that substance are labeled in containers before usage.
3. Brains - use your brain wisely - safety begins with you.
4. Apparel - always wear appropriate protective equipment and apparel.
5. Responsible to read and understand the experiments before conducting them and to be aware of any activity is going to do in the laboratory (e.g. design etc.)
6. Attention - always pay attention to the work and do not fool around in the laboratory.
7. Supervision - never work in the laboratory without the supervision of a faculty.
8. Emergency readiness - know what to do in the event of an emergency.
9. Careful use of equipment following the user manual and instructor's advice; **and a student is supposed to be:**
10. Liable to follow the faculty instructions.
11. Under an obligation to follow the safety procedures, manuals, related to the Laboratory and its devices.
12. Trustworthy for safe behavior (e.g. sitting only on chairs, maintain discipline and order etc.).
13. Duty-bound to report any safety concern to the faculty.
14. Amenable to take care of the colleagues' safety.
15. Self-disciplined for storing bags and other material in a safe place in order to avoid dangers or difficulties during the Lab time or after.
16. Accountable not to introduce any dangerous object, substance, and not to use food and drinks in the lab.
17. Self-righteous for cleaning the workplace after the experiment and switch off the equipment.
18. Responsible to leave the class only after informing the faculty.

This document was approved by clinical laboratory sciences department council No (3) on 7/4/1445

And the summary of the following council was attached here