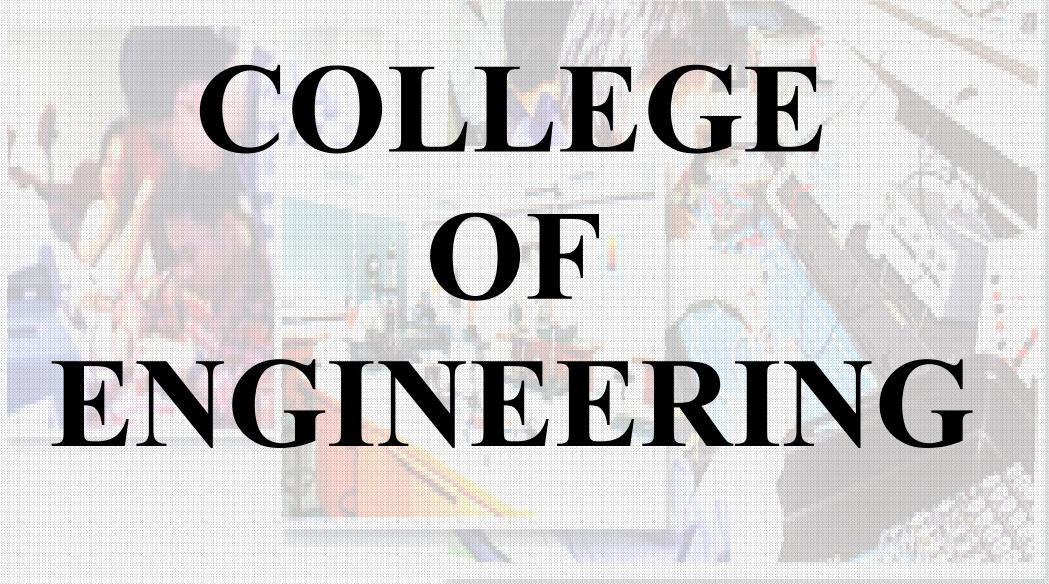
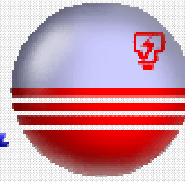


**UNIVERSITI  
TENAGA  
NASIONAL**



**COLLEGE  
OF  
ENGINEERING**

**SAFETY  
HANDBOOK**

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## **1.0 FOREWORD**

The College of Engineering of Universiti Tenaga Nasional is firmly committed in providing a safe and healthy environment for all students, faculty, staff and visitors. A safe environment begins at the operational level: the students at the fume hood, the staff member in the workshop, the researcher at the lab bench, etc. Safety is the business and responsibility of every university employee and students. Thus, it is essential that we all ensure proper and safe facilities, training and education regarding safety procedures and operations, the utilization of appropriate protective equipment, and the firm enforcement of safety rules and regulations. All students and staff have the first level of responsibility; their attitudes, work habits, and understanding of their responsibility are critical to a safe environment. The faculty and immediate supervisors of the students and staffs have the next level of responsibility and must instill safety traits in their laboratory, workshops, and office personnel. It is important for all in initiating and implementing preventive measures to control and eliminate hazards that may be associated with activities under our direction. The College of Engineering intends to fully support the University's strict adherence to all relevant occupational and environmental regulations, codes, and standards. Together everyone has the responsibility for maintaining an effective environmental health and safety program. Its success can only be achieved through the cooperation and support of everyone involved. All of us must accept the challenge of maintaining an accident-free and healthy environment. It is our positive safety attitudes, knowledge of safe practices, and actions that will determine the ultimate success of our safety program.

## **2.0 College of Engineering (COE) SAFETY & HEALTH POLICY**

The College of Engineering acknowledges its duties under the Occupational Safety & Health Act 1994, to provide and to promote a healthy and safe working environment for members of its staff, students, visitors and contractors, as far as is reasonably practicable. To ensure compliance and enforcement of the rules and regulations as contained in the Act 1994, the College of Engineering abides by its Safety & Health Policy, which states that:

1. The College considers that high standards of safety and health are integral to the effective management of the College.
2. The College views compliance with legal requirements as the minimum acceptable safety and health standard and will endeavour to improve upon those standards where possible within the constraints of available financial resources.
3. The College is committed to planning, review and development of safety and health arrangements in order to achieve a continual improvement in performance.
4. The Dean of College of Engineering will ensure that appropriate personnel are appointed to assist in the formation, implementation and development of safety and health policy.
5. Safety and health training for all staff, students and those with specific safety and health duties, will be given the same priority as other essential training required for the smooth and safe running of the College.
6. All staff, students and others working in the College are expected to cooperate on safety and health within the College and must:
  - comply with appropriate legal requirements and University requirements as laid down in the University Codes of Practice;
  - take reasonable care for their own safety and health and that of others who may be affected by their activities;
  - inform their immediate superior or COE Safety Committee members of any situations that, within the limits of their competence, they consider could give rise to serious or imminent danger or are shortcomings in safety and health arrangements;

### 3.0 OBJECTIVES

To achieve the aim of providing a safe and healthy environment, the College has the following key objectives:

- To ensure that the College complies with the requirements of relevant safety and health legislation;
- To ensure that all work undertaken by individuals on College premises or engaged in College external activities will be carried out, as far as is reasonably practicable, without risk to the safety and health of the general public;
- To provide a safe and healthy working environment for members of its staff, students, visitors, contractors and members of the public;
- To ensure that members of its staff, students and others directly affected by the work of the College are adequately informed of the identified risks and, where appropriate receive information, instruction, training and supervision;
- To appoint competent persons to assist in meeting statutory obligations;
- To provide facilities and arrangements to enable members of its staff and their representatives to raise issues of health, safety and welfare through management and employee consultation;
- To ensure that all staff and students cooperate with the College to maintain safe working conditions through safe systems of work and working practices;
- To ensure that all staff and students report accidents and incidents that has led to, or may lead to, injury or damage.

The College of Engineering safety and health committee will ensure that the Safety & Health policy is carried out through regular monitoring. The Policy will be reviewed and if necessary revised in light of legislative or organizational changes.

## **4.0 DUTIES AND RESPONSIBILITIES**

All university employees (i.e., faculty, graduate students, research assistants, technicians, lab instructors, etc.) and students are responsible and accountable for safety performance and environmental protection as outlined in this manual. Faculty, staff, and students are responsible for the followings:

- Performing their jobs in the safest prescribed manner.
- Eliminating and/or reporting workplace hazards.
- Reporting accidents, incidents, and unsafe practices or conditions to the Head of Department.
- Ensuring proper disposal of or transfer of all hazardous materials before leaving the university.

## 5.0 EMERGENCY CONTACT NUMBERS

- POLICE 999
- UNITEN 03 – 89287555 / 89212020
- UNITEN GATE 1 1514
- UNITEN GATE 2 7555

<b>LABORATORIES</b>		<b>EXT.</b>	
<b>ELECTRICAL ENGINEERING DEPARTMENT</b>	1	Wet PCB	6290
	2	Robotics and Control	6291
	3	Communication System	6285
	4	Machines	6238
	5	Power Electronics and Drive Technology	6295
	6	Digital Electronics Design	6296
	7	Research	6283
	8	Electronics Design	6289
	9	Measurement	6288
	10	Microprocessor Applications	6294
	11	Signal Processing and Computer (MATLAB)	6275
	12	PLC	3282
	13	Mobile Robotics	6344
	14	Radio Frequency and Microwave Training	6345
	15	Optoelectronics and Fiber Optics	6346
	16	EMF	6335
	17	Communications System	
	18	Computer Engineering and Networking	
	19	Supervisor Office	6236
<b>MECHANICAL ENGINEERING DEPARTMENT</b>	1	Material	6280
	2	Thermofluid	6281
	3	Design	6282
	4	Measurement	6324
	5	AutoCAD	6251
	6	CFD	6317
	7	Workshop (BF)	6297
	8	Heat Transfer	6321
	9	Supervisor Office	6252
<b>CIVIL ENGINEERING DEPARTMENT</b>	1	Structure and Material (BD)	6328
	2	Soil (BD)	6326
	3	Hydraulic (BD)	6325
	4	Computer (BL)	6272

## **6.0 COE OCCUPATIONAL SAFETY AND HEALTH COMMITTEE**

The Occupational Safety and Health Act (OSHA) 1994 is an Act to make further provisions for securing that safety, health and welfare of persons at work, for protecting others against risks to safety or health in connection with the activities of persons at work, to establish the National Council for Occupational Safety and Health, and for matters connected with it.

According to the section 30 of the OSHA'94, every employer who has more than 40 workers or as directed by the Director General, must establish a safety and health committee at their workplace. The functions of the safety and health committee as specified in the Safety and Health Committee Regulations 1996 are:

- To assist in development of safety and health rule
- To review the effectiveness of safety and health programs
- To carry out studies on trends of accident, near-miss, dangerous occurrence, occupational disease which occurs at place of work and to report to employer on unsafe conditions with recommendations for corrective actions.
- To review safety and health policies and make recommendations for any revisions.

The functions as listed above required the committee to perform:

- Inspection of place of work once every 3 months to ensure a safe and healthy place of work.
- Investigation into any accident and make recommendation to employer to prevent the reoccurrence of such accident.
- Record of action to be taken on report and recommendation of committee by the employer.
- Other matter to be considered like safety audits and reports by other government agencies on matters pertaining to safety and health at place of work.

- Prepare and promote rules on safety and health which will ensure safety and health of persons at place of work.

In Uniten, the College of Engineering is represented by a sub-committee which is a group of faculty staffs nominated from the Department of Electrical, Mechanical, Civil and Math & Science and representatives from the students' affair committees. The names of the committee members are posted at the notice board at the ground floor of the COE administrative building. The duties of the committee members are to assist Uniten main safety and health committee in ensuring that OSHA '94 and its appropriate regulations are implemented at college level. The College of Engineering Safety and Health (COE S&H) sub-committee meets once every 2 months to discuss and make recommendations on safety matters. This committee is chaired a chairman appointed by the Dean of the College of Engineering. Decisions of this committee are relayed to the various Head of Department via its minutes and to staffs via e-mails.

## 7.0 EMERGENCY AND FIRE EVACUATION

### ALL STUDENTS ON HEARING THE FIRE ALARM....

- **Leave the building by the nearest exit**
  - Follow instructions from your class lecturer/tutor and proceed to nearest *Assembly Point*
  - Stay with your class lecturer/tutor at the *Assembly Point*
  - If you have a vehicle in the car park do not remove it until authorized to do so
  - Await further instructions
  - Do not re-enter the building until authorized to do so by *Person in charge of Assembly Points*
  
- **Special additional procedures**

If you are in any other part of the building when the alarm is activated leave the building and proceed to the nearest *Assembly Point*.

### IF YOU DISCOVER A FIRE....

- **Sound the Fire Alarm**
  - Activate the alarm by means of the nearest break glass-point
  - Leave the building by the nearest exit
  - Report to *Assembly Point* and immediately inform the *Person in Charge* of your action and the location of the fire

### ASSEMBLY POINTS

***Assembly Point 1* – Car Park, BN Block (South End)**

***Assembly Point 2* – Car Park in front of BM Block**

## 8.0 SAFETY REGULATIONS

### 8.1 Smoking Policy

UNITEN practices **NO SMOKING** policy on its campus building.

### 8.2 Alcohol and Dangerous drugs

College of Engineering, Universiti Tenaga Nasional is committed to protecting the safety, health and well being of its students and staffs and recognized that abuse of alcohol and other drugs pose a significant threat to our goals. We strive to achieve an alcohol and drug-free environment in the campus. “The use, possession, transfer or sale of alcohol and illegal drugs by students and staffs is **strictly prohibited.**” **Actions will be taken against students and staffs found to have violated this policy.**

### 8.3 Pedestrian Safety

- With so many vehicles on the road, pedestrians need to be aware of their surroundings and the “rules of road” to avoid being hit by a car or other motor vehicle. Pedestrians’ injuries and death may be reduced by following some simple guidelines:
- Cross streets at intersections.
- Be sure to look left, the right, and then left again before crossing a street even if you have the right of way (a marked crosswalk, walk signal, or green light for traffic in the direction you are going). Continue to look left and right as you cross to be sure cars are not coming.
- Dress in light clothing if you are walking at night – cars may not be able to see you if you are wearing dark clothes.
- Obey pedestrian signs at construction zones.
- Always walk on the sidewalk if one is available. If there is not a sidewalk, walk facing traffic so that you can see cars coming and drivers can see you.

## 8.4 Vehicle Safety

The rules and regulations are meant for traffic and parking within UNITEN campus under the responsibility of Pejabat Keselamatan. Generally, all users need to abide the Akta Pengangkutan Jalan 1987 except in certain condition(s). This includes:

- Valid driving license
- Valid road tax
- Wear safety helmet for motorcyclist
- Abide the speed limit: 40km/h for main road and 20km/h for connecting roads
- Register your vehicle to Pejabat Keselamatan:
  - UNITEN/TNB staff/tenants/TNB subsidiaries per 2 years,
  - Students per semester
  - Contractor per 6 months
- UNITEN has the authority to reject your application for vehicle registration due to the controlled number of vehicle or if your car has any record of bridging the traffic and/or parking rules and regulation, disallow your vehicle from entering university compound, or issue penalty if the vehicle is within the UNITEN compound illegally.

### 8.4.1 Parking

Parking lots are provided for UNITEN staff, students, course participants, and visitors. However, the allocations are according to priority. Zoning system is implemented at UNITEN:

- Yellow zone: staff
- Red zone: students staying out campus
- Blue zone: students staying at Kelompok Cendikiawan
- Purple zone: students staying at Kelompok Cendikiawan, but allowed to park at Dewan Serbaguna parking space
- Green zone: students staying at Kelompok Ilmu
- Pink zone: students staying at Kelompok Murni

- Grey zone: students staying at Kelompok Murni, but allowed to park outside Murni compound
- Orange zone: students staying at Kelompok Amanah

### **8.4.2 Violation**

Violation to the traffic rules and regulation may lead to summon/fine. If the violation is done for a few numbers of time or the vehicle is not registered then a more serious action will be taken i.e. the vehicle will be clamped. Below is the list of common violation:

- Park at the wrong zone
- Park at the road shoulder with yellow line
- Against the one way traffic
- Leaving the key at the vehicle when parking
- Not wearing safety helmet
- Driving without valid driving license
- Vehicle with no valid road tax
- Driving/cycling in a dangerous style/way
- Over the speed limit
- Vehicle not registered with UNITEN
- No valid UNITEN sticker
- Tampering officially registered details of sticker

#### **8.4.2.1 Consequences of Violation**

- For 2 – 3 wheel vehicle (fine): RM30.00
- For 4 wheel vehicle (fine): RM50.00
- For Vehicle with clamped wheel (fine): RM100.00

## **8.5 Electrical Engineering Laboratory Safety Guidelines**

Lab users can protect themselves from the hazards of electricity by following some basic guidelines. The guidelines include maintaining awareness on the condition of lab equipment, the proper use of lab equipment and safe work practices.

### **Be Prepared**

- Learn the location of your electrical panels and shut-off switches so that you can quickly disconnect power in the event of an emergency. Be sure to always leave at least a 3-foot clearance around electrical panels for ready access.
- Plan ahead for what steps will be taken in the event of a power loss. Think about potential vapor/gas release from vapor-generating processes or chemical fume hoods if power is lost.
- Remove equipment from service if in poor condition and replace or have it repaired by a qualified technician.

### **Outlet Receptacles**

- Electrical outlets should have a grounding connection and accept three-prong plugs. Multiple plug outlet adapters are not allowed.

### **Power Cords, Power Supplies**

- Inspect power cords to be sure they are not frayed or have exposed wiring.
- Carefully place power cords so they do not come in contact with water or chemicals. Contact with water is a shock hazard. Corrosives and solvents can degrade the cord insulation.
- Do not allow cords to dangle from counters or hoods in such a manner that equipment could be unplugged; fall, or cords could be tripped over.
- Do not allow cords to contact hot surfaces to prevent melting insulation.

- Do not lift a piece of electrical equipment by the cord or pull the cord to disconnect from the outlet in order to prevent damage.
- Portable power supplies are commonly used in the lab. These devices are extremely high electrical energy sources and must be used carefully. Never attach an exposed connector such as an alligator clip to a power supply.
- Power cords must have grounding plugs or be double insulated.
- Extension cords are not allowed in the laboratory.

### **Circuit Protection**

- No more than two high current draw devices such as ovens and centrifuges should be plugged into the same outlet to prevent an overloaded circuit. Overloading can lead to overheated wires and arcing. This can cause electrical shock injury and fire.
- Fuses and circuit breakers prevent over-heating of wires and other electrical components. This overload protection is useful for equipment that may be left on for a long time such as stirrers, drying ovens, vacuum pumps, variacs, etc.
- Ground-fault circuit interrupters, or GFCIs, disconnect current if a ground-fault is detected and protect the user from electric shock. GFCI outlets or portable GFCIs are used near sinks and potentially wet locations. Keep electrical equipment (and yourself while you are using electrical equipment) away from water/chemical or their spills unless you are sure the equipment is rated for this type of use.

### **8.6 Mechanical Engineering Laboratory Safety Guidelines**

- Always ventilate the work area when brazing, soldering or welding.
- Never check for gas leaks with open flames.
- Have proper fire extinguishers available when using a torch.
- Secure all gas cylinders while in use, storage or transportation.
- Store all chemicals, primers and any flammable liquid in an approved storage containers.
- Never operate certain machinery/equipment which present special hazard alone.

- Always use personal protective equipment when working on machinery.
- Exposed moving parts of power tools must be fitted with guards. Never carry tools by the chord and never remove safety guards.
- Never enter perimeter guarding of the robotic arm when it is in operation.
- Interlocked gates and safety switches must be checked before operating the robotic arm.
- Maintain good housekeeping, keep pipes and materials off of floor area and store in approved racks. Wipe up any spillage immediately.
- Do not engage in horseplay in the laboratory.
- Return all equipment, tools and unused specimen to laboratory instructor before leaving and report all equipment faults if any.

## **8.7 Civil Engineering Laboratory Safety Guidelines**

### **Air Compressor**

- Hearing and eye protection shall be worn when operating the air compressor.
- Decompress air from compressor prior to removing any caps or air equipment attachments.
- Make sure hose connections are secure to avoid hose coming loose during use. High pressure air can cause serious injury.
- Do not move a pressurized compressor. Relief pressure first.

### **Concrete Saws**

- Use the correct amount of water while operating blade in the cut mode.
- The use of eye, ear and face personal protective equipment is mandatory.
- Keep all safety guards in place while operating.
- Check blade nuts for tightness.
- When installing or changing blade, disconnect power supply.
- Never leave concrete saw unattended with blade spinning.
- Always use the correct blade for the material to be cut.

### **Powered Drills**

- It is mandatory to wear safety glasses or a faceshield.
- Do not wear loose clothing.
- Use a hairnet or tie back long hair to avoid hair becoming caught in the drill bit.
- Choose the bit that suits the size of the drill and the task to be done.
- Never use a bent bit.
- Ensure that the bit is seated properly and tightened in the drill chuck.

### **Hand Tools**

- Do not use a hammer that has a repaired handle.
- Wear eye goggles or a facemask.
- Hold chisel in palm of hand not in fist.
- Use a wrench that is the correct size for the job.
- Never use a pipe on the handle to get extra leverage.

### **Angle Grinders**

- It is mandatory to wear safety glasses or a faceshield.
- Wear overalls or other close-fitting clothing.

### **Ladders**

- Inspect all ladders for cracks, breaks or weak points. Replace if found defective.
- For heavy or lengthy work, use a mobile platform or scaffolding.
- Only one person should be on the ladder at any time.
- Wear slip resistant shoes.

### **Lifting**

- Always plan your lift.
- Seek assistance even for small loads.
- Lift the load slowly. DO NOT JERK.

- Set the load down gently. Use your legs and keep your back as straight as possible.
- Be sure your fingers are out of the way when putting the load down and when moving the load through tight spaces.

### **Rigging**

- Know the rated capacity of cable, chain or wire rope being used.
- Avoid overloading.
- Avoid rapid movements.
- Wear personal protective equipment consistent with the hazard such as hard hat, safety glasses and gloves.

### **Electric Welding and Cutting**

- Approved personal protective equipment must always be used when welding or cutting.
- Know the position of the closest fire extinguisher.
- Never carry welding cables coiled around your shoulders when they are carrying power.

### **Wood Working**

- Safety shoes, eye and ear protection and dust masks are mandatory.
- Ensure that the blades and knives are sharp and working properly.
- Never adjust settings on machinery until switch is off and blades have ceased to rotate.
- Do not wear rings, ties or loose fitting clothing when operating machinery.

## 8.8 Chemical Engineering Laboratory Safety Guidelines

**Before starting to work in a laboratory**, familiarize yourself with the following:

- The hazards of the materials in the lab, as well as appropriate safe handling, storage and emergency protocols. Read labels and material safety data sheets (MSDSs) before moving, handling or opening chemicals. **Never use a product from an unlabeled container, and report missing labels to your supervisor.**
- The agents, processes and equipment in the laboratory. If you are unsure of any aspect of a procedure, check with your supervisor before proceeding.
- The location and operation of safety and emergency equipment such as fire extinguishers, eye wash and shower, first aid and spill response kits, fire alarm pull stations, telephone and emergency exits
- Emergency telephone numbers. These numbers are usually posted near lab phones and on the lab door.
- Designated and alternate escape routes

### **During laboratory work**

- Restrict laboratory access to authorized persons only
- **NO** smoking; eating; drinking; storing food, beverages; applying cosmetics or lip balm and handling contact lenses in laboratories.
- Wear lab coats and safety glasses in laboratories.
- Never smell, inhale or taste a chemical
- Open shoes, such as sandals, should **never** be worn in the lab.
- Tie back or otherwise restrain long hair when working with chemicals, biohazards, radioisotopes, or moving machinery.
- Keep work places clean and free of unwanted chemicals. Avoid leaving reagent bottles, empty or full, on the floor.
- Work only with materials once you know their flammability, reactivity, toxicity, safe handling and storage and emergency procedures.
- **Never pipette by mouth**; use mechanical transfer devices.

- Label all containers with chemical content. Never pour any left over chemicals back into the original reagent bottle. This is to avoid contamination.
- Use chemical buckets as secondary containment when transferring chemicals between laboratories.
- Consider any unlabeled chemical solution as hazardous. Discard any chemicals that have changed color or appearance using approved disposal procedure.
- Do not leave chemical containers open any longer than it takes to remove what you need. This will help minimize exposure and contamination of your chemicals
- Use equipment only for its designated purpose.
- Walk, do not run, in the lab.
- Keep exits and passageways clear at all times.
- Ensure that access to emergency equipment (eyewashes, safety showers and fire extinguishers) is not blocked.
- Working alone is an unsafe practice at any time. However, if the nature of your work makes it unavoidable, take measures to ensure that others are aware of your location and have someone check in with you from time to time, either in person or by telephone.
- Report accidents and dangerous incidents ("near-misses") promptly to your supervisor
- Wash your hands thoroughly before leaving the laboratory.
- Conduct procedures involving the release of volatile toxic or flammable materials in a chemical fume hood.
- Perform procedures that liberate infectious bioaerosols in a biological safety cabinet.
- Avoid distracting any other worker. Practical jokes and horseplay is not allowed at any time.

## **Cleaning up before leaving**

- Perform a safety check at the end of each experiment and before leaving the lab. Make sure to:
- Turn off gas, water, electricity, vacuum and compression lines and heating apparatus
- Return unused materials, equipment and apparatus to their proper storage locations
- Label, package and dispose of all waste material properly (Refer to Section 9.3 "Waste Preparation Procedures")
- Remove defective or damaged equipment immediately, and arrange to have it repaired or replaced.
- Decontaminate any equipment or work areas that may have been in contact with hazardous materials.
- Leave behind protective clothing (lab coats, gloves, etc.) when leaving the laboratory. DO NOT wear protective clothing out of the lab into elevators, during lunch breaks, or while typing on computers.
- Close and lock the door to the laboratory if you are the last one to leave

## 9.0 WHAT TO DO

### 9.1 Serious Injury

In case of serious injury, call for medical assistance. Medical assistance is available in the University through the dispensary from 8am -5.30pm and emergency number to call is **Ext. 1422 (24 HOURS)**. Do not provide first-aid to injured person unless you are competent. Stay with the injured person and ensure that the injured person is kept as still and as warm as possible while waiting for medical assistance.

All serious injury due to accidents in the laboratory must be reported to the college occupational safety and health committee by the laboratory assistant/instructor using the **Injury Report** form. This form can be obtained at the ground floor in the administrative building.

When making an oral/preliminary report, whether by telephone or note, the reporting party shall include the following information, if available:

- Time and date of accident
- Injured person name, address and telephone number.
- Name and job title (staff), or student identification number of person reporting the accident.
- Address of site of accident or event.
- Name of person to contact at site of accident.
- Nature of injury.
- Location where injured employee(s) was (were) moved to.

## 9.2 Hazards, Incidents, Accidents and Near Miss

### Hazard



#### Examples of unsafe acts

- Unauthorized operation of equipment
- Running - Horse Play
- Not following procedures
- By-passing safety devices
- Not using protective equipment
- Under influence of drugs or

**Incident** An incident is something that happens, often something that is unpleasant.

**Accident** Unexpected/unplanned events in a sequence of events that occurs through combination of causes that results in physical harm (injury or disease) to an individual, damaged to property, a near miss, loss of time or a combination of them.

**Near Miss** An event that only by chance did not cause injury or property damage.

### Smart Safety Rules

- Do it the way you have been trained – follow all specific safety rules
- Report all unsafe acts or unsafe conditions immediately
- Encourage others to work safely
- Check & use the correct Personal Protective Equipment for the specific hazard
- Ask for help when you need it
- Ask questions when you are not sure
- Report any injuries immediately
- Lock & Tag all equipment before adjusting or doing maintenance
- Inspect ladders before using

- Don't use chemicals unless you have been specifically trained on the hazards and protection steps
- Don't create trip hazards – keep your work area neat & clean

### **What to do in case of accident?**

#### **At the scene**

- Make a report to the person in charge/Call the emergency number(s)
- Provide First Aid for any injured persons
- Eliminate or control immediate hazards
- Document accident scene to determine cause
- Interview witnesses immediately
- Collect facts about the accident
- Collect and preserve evidence

**ACCIDENTS ARE PREVENTABLE!**

### **9.3 Disaster Alarm (Tremors)**

It is usually safer to remain inside a building in all but a major earthquake. Move away from windows that may break or anything that may fall.

Take shelter under solid furniture or in a doorway.

Do not start evacuation until major shaking has stopped. When the evacuation alarm sounds, follow the normal evacuation procedure.

Be aware of possible aftershocks

## 10.0 RISK ASSESSMENTS

The safety and health regulations require that as an employer, the University assesses the risks to its members of staff and others who may be affected by its work, and in undertaking such assessments identify the measures required to ensure compliance with health and safety regulations.

A risk assessment is carried out to identify the risks to health and safety to any person arising out of, or in connection with work or work activities undertaken at the University or wherever the University is undertaking its business. A risk assessment should include therefore:

- Addressing risks and hazards;
- Identifying those who might be harmed by the hazards;
- Reviewing all aspects of work activity (laboratories, maintenance work, etc);

The risk assessments should be reviewed whenever there are significant changes in work activities, personnel's and risks involved.

## 11.0 ACKNOWLEDGEMENT FORM

Faculty, Staff and Students in the College of Engineering (COE) are **REQUIRED** by the University, College and Department to read this manual and sign that they have read and understood the materials. The University requires us to keep these on file during your time here at the COE.

I have read and understood all of the material in the COE Safety Manual; I am aware of the dangers in the Lab and know the precautions to be taken to avoid injury to myself and others in the Lab.

Staff/Student

ID: .....

Signature:

.....

Date:

.....