# UNIVERSITY OF NAIROBI

# SAFETY PLAN

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# Foreword

The University of Nairobi has made big strides towards achieving its vision of becoming a world-class university committed to scholarly excellence. The realization of this vision is pegged on the university's preparedness to guarantee a safe environment for its clients by minimizing the occurrence of risks in the institution and, in case they occur, mitigating their effects.

The increasing complexity of our present-day society is reflected in our university. Social attitudes towards safety, health, and protection of the environment have changed drastically. New standards of what constitutes a safe environment are evolving and the university must therefore strive to continually improve and maintain world-class university safety standards. This safety plan is therefore designed to provide a safe environment for all persons within the university premises.

The general implications of the plan are that building designs shall be modified, safety equipment shall be added, and new procedures shall be generated, necessitating additional responsibilities. The university shall endeavour to provide timely and accurate information and training where required for all stakeholders. This will help them make intelligent and informed decisions about safety in view of the fact that safety is the collective responsibility for all members of the university community.

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# Table of Contents

# Background

## 1.0 Introduction

The University of Nairobi has gone through tremendous changes over the years in the management of its affairs. Now, it is also clear that the university is moving away from conventional systems of managing activities and moving towards embracing modern management techniques, including results-based performance management systems. Among key developments which are indicative of a paradigm shift towards world-class excellence, the university has embraced the performance management technique that is considered the major driver of change such as being certified by the International Organization for Standardization (ISO), implementing the University of Nairobi Strategic Plan 2008/2013, performance contracting and instituting annual staff performance appraisals. These, among other developments continue to play a central role in propelling the university towards world-class excellence, while keeping track with the Japanese ***gemba kaizen*** concept of continual improvement.

Two key departments in the university that falling under the Deputy Vice Chancellor (Administration and Finance) are Security and Estates which are charged with ensuring the safety of university students, staff, the vast land, equipment, motor vehicles and, on the whole, physical facilities. To this end, they have put in place strategies, including their respective strategic plans, to cover the period 2008-2013.

## 1.1 Rationale for the Safety Plan

In the face of the changing world, there is urgent need to develop a safety plan. The purpose of this plan is to provide a safe and healthy environment for everybody in the university; its provisions therefore apply to all university clients.

Our campuses today reflect the increasing complexity of our society and the drastically changing social attitudes to safety, health, and the protection of the environment. Consequently, issues such as crime, drugs and environmental pollution are competing with conventional academic issues for attention. New standards for what constitutes a safe institution are evolving, and the university must change to keep pace with the changing world. At times, buildings must be modified, safety equipment procured, new procedures written and additional duties assigned. The university shall endeavour to provide timely and accurate information, and training where required, to members of the university community so that they can make intelligent and informed decisions about their own safety. This is because safety is not only a continuing process for the university community but also a personal responsibility for each member.

In an effort to improve service delivery and provide a conducive work environment, the university undertook to develop a safety plan. In line with this, the Deputy Vice Chancellor (Administration and Finance) instructed Security and Estates to develop a safety plan for the university.

# Possible Risks

## 2.0 Definition

Risk can be defined as a danger, possibility of a loss or injury, and the degree of probability of such loss. A risk arises when it is possible that a hazard will actually cause harm or damage. Safety risks facing the university stem from

a) the work place,

b) fire,

c) terrorism,

d) public disorder,

e) information systems,

f) burglary and theft, and

g) natural calamities such as
- lightning risks,
- flooding,
- earthquakes, and
- outbreaks of diseases.

## 2.1 The Work Place

### 2.1.1 Introduction

A large number of workplace accidents and injuries occur in office buildings. The work place requires preventive measures to ensure a safe and healthy environment and, specifically, general safety guidelines and procedures for office safety in face of accidents whose common causes include:

a) illegal cooking in halls of residence by students,

b) slippery floors,

c) burning, cutting and pinching hazards,

d) improper lifting and handling techniques,

e) employees not being observant of and attentive to safety procedures,

f) poor electric wiring,

g) exposed terminal electric wires,

h) basement storage,

i) mud scrappers,

j) chemical spills, and

k) injury due to sharps in clinical areas.

Common health hazards include:

    a) excessive dust

    b) excessive humidity

    c) overcrowding

    d) poor ventilation

    e) working without protective gear, and

    f) use of asbestos roofing in buildings.

### 2.1.2 Recommendations

    a) putting up warning signs in cases of slippery floors,

    b) providing first aid kits in departmental and unit heads' offices,

    c) installing electric wires properly and regularly maintaining the wiring, and

    d) wearing protective clothing when and where necessary.

## 2.2 Fire

### 2.2.1 Introduction

Fire is combustion or burning, in which substances combine chemically with oxygen from the air and typically give out bright light, heat, and smoke.

### 2.2.2 Classes of Fire

There are six different classes of fire:

    a) Class A, which consists of the ordinary fire and involves burning solids like paper, wood, and clothing,

    b) Class B, which involves flammable liquids,

    c) Class C, which involves flammable gases,

    d) Class D, which is made up of metallic fires and is caused by burning metals,

    e) Class E, which is made up of electrical fires, and

    f) Class F, which is a combination fires, involving two or more classes of fire at the same time.

### 2.2.3  Common Causes of Fire in the University

a) careless disposal of lit cigarette butts

b) arson

c) poor handling of flammable liquids and gases

d) electrical over-loading

e) using substandard or faulty electrical appliances

f) machines overheating due to lack of oiling and being left running for long hours unattended, and

g) negligent use of electrical appliances.

### 2.2.4  Fire Prevention Guidelines

Protection against fire-related property loss and injuries include

a)  using open flames carefully,

b)  not using open flames where flammable materials may be present,

c) minimizing amount of combustible materials stored,

d)  using flammable materials in well-ventilated areas,

e)  ensuring that heating units are properly safeguarded

f) keeping equipment in good working order,

g)  no smoking, lighting  matches or lighters in prohibited areas,

h)  not blocking exits, entrances, fire-fighting equipment, electrical panel boxes or switches,

a)  not storing flammable materials  in electrical rooms or under staircases,

b)  not using flammable liquids near open flames, or electrical panels or switches, and

c) using proper signage.

### 2.2.5  Fire Fighting

Fire fighting is the process of putting out fire using the right material and equipment.

### 2.2.5.1 Fire Fighting Equipment

a)  fire extinguishers,

b)  water buckets,

c) sand buckets,

d)  fire engines,

e)  water hose reels,

f) break glass call points,

g)  heat and smoke detectors,

h)  fire control panel,

i) wet and dry risers,

j) automatic fire suppression units,

k)  sprinklers,

l) fire alarms, and

m) fire blankets.

### 2.2.5.2 Fire Extinguishers

Fire extinguishers are very popular equipment for fire fighting because they are portable.  It is important to use the right type of fire extinguisher, however; for example, it would be dangerous to use water type fire extinguisher to fight electrical fires as water is a good conductor of electricity. Consequently, before one uses a fire extinguisher, one must first determine the class of fire one is dealing with. There are different types of fire extinguishers for different classes of fire:

a)  water type, suitable for class A fires,

b)  foam type, suitable for class B fires,

c) carbon dioxide type , suitable for class B and E fires,

d)  dry powder type, suitable for all classes of fire,

e)  halon type, suitable for all classes of fire, and

f) AFFF multi-purpose foam spray, suitable for classes A, B, and C fires.

**Note:** The use of halon type fire extinguisher is restricted to specific industries because it affects the ozone layer.

### 2.2.5.3 Methods of Fire Fighting

Fire fighting methods are an attempt to separate the three elements of fire because fire cannot be there in the absence of one or more of the elements.

a) **The smothering method** involves removing oxygen from the other two elements of a fire, for example by covering a burning object with thick clothing.

b) **The starving method** involves isolating a burning object or the fuel.

c) **The cooling method** involves lowering the temperatures to reduce the heat, for example, by pouring a coolant on a burning object.

### 2.2.6  Fire Patrols

While on their patrols, security guards should be on the lookout for ways of reducing fire outbreaks by

a) cleaning any oil spillage,

b) switching off any heaters left unattended,

c) ensuring fire-fighting equipment are free from any obstruction,

d) removing flammable materials near sources of heat,

e) closing doors and windows should be closed,

f) ensuring emergency fire exits are always clear,

g) ensuring that no smouldering fires are left unattended, and

h) ensuring that all fire exits are clearly marked

### 2.2.7  Fire Emergency Drill Procedures

In the event of a fire, the security personnel and trained fire marshals are expected to lead the way in providing leadership in fighting the fire, evacuating people and administering First Aid.

Further, in the event of fire, one should take these steps:

a) shout "fire, fire,"

b) blow a whistle to draw attention as one continues shouting, "fire, fire,"

c) break the glass and press a fire alarm,

d) start fighting the fire with the available proper equipment,

e) call any of the following numbers in the University of Nairobi Fire and Safety Guidelines to report the fire: 0717035268, 0750582391, or 0731453263,

f) switch off the electricity main and switch off any running machine,

g) move from floor to floor, starting from the top, leading people out of the building and using staircases—and never using the lifts,

h) control the crowd,

i) close the windows and the doors behind one without locking them as there may be people trapped behind,

j) lead ALL to the FIRE ASSEMBLY POINTS, and

k) take a roll call, administer First Aid and assist the serious cases to the ambulance.

### 2.2.8 First Aid

First Aid is the skilled application of accepted principles of treatment when injury or sudden illness occurs, using available facilities or materials for treating a casualty until the casualty, if necessary, is placed under the care of a doctor or moved to a hospital.

**First Aid Procedures**

**a) Assessing the Situation**

A first aiders should

- be calm and exude confidence to reassure a victim,
- ensure safety of both the victim and the first aider, and
- use by-standers to call for emergency services and to help control traffic as well as help in the treatment.

b) **Diagnosis** is the process of determining what is wrong with a casualty; the first aider should use one's senses by

- **Listening**: the first aider should listen to what both the spectators say and the casualty says, as well as ask questions that will help to reveal the casualty's symptoms, for example, dizziness, nausea, pain, or loss of sensation.

- **Smelling**: by getting a whiff of the casualty's breath; the smell of the surrounding could offer crucial clues to casualty's condition.

- **Looking**: by trying to determine the sort and rate breathing or bleeding of the casualty and the presence of any containers or contents from the scene.

- **Touching**: by using one's hands, the first aider should examine a casualty from the head to the toe, comparing the two sides of the body being aware of "dampness" (such as bleeding), tenderness, and deformity; at times one may need to remove the clothes for proper touch examination of the casualty or to cut a garment from the casualty. One should not remove a protective helmets, however, unless:
  - It is interfering with breathing
  - The casualty is vomiting and might choke.
  - The casualty has severe head injuries.
  - Urgent treatment is needed and is available.

### c) Treatment

Treatment may involve:

- ensuring the airway is open for free air passage to the lungs,
- giving mouth-to-mouth resuscitation if the casualty is not breathing, and
- applying external chest compression if the casualty's blood circulation has stopped.

### d) After Treatment

The casualty should be released after First Aid to a hospital, a doctor, or a more comfortable nearby house as the first aider waits for an ambulance.

**Note:** The basic rule in First Aid is to for one to use their common sense, to try not to be a casualty and just evacuate to avoid aggravating injury. The first aider should handle the most serious cases first.

### 2.2.9 Fire Response

All employees and students should recognize evacuation signals and know exit routes they are to follow in the event of a fire. Primary and alternate routes should be established, and all staff and students should be familiar with the routes. If one sees a fire or smoke, one should take these steps:

a) Begin evacuating the building.

b) If one is not in any immediate danger, call any of the following numbers in the University of Nairobi Fire and Safety Guidelines to report the fire: 0717035268, 0750582391, or 0731453263

c) If one is formally trained in fire-fighting techniques and is not in any immediate danger, one may attempt to fight the fire.

d) One must not place oneself or others in unnecessary danger.

e) Exit the building by following posted evacuation routes.

f) One must not use elevators during an emergency.

g) Give special attention the physically challenged.

h) During emergencies, one must not re-enter a building until told to do so by fire officials.

### 2.2.10 Recommendations

a) Contract external fire safety service provider to conduct a baseline survey and assess the level of preparedness in the event of a fire.

b) Adopt the baseline survey report, together with its recommendations, by the service provider.

c) Conduct fire-disaster preparedness audit annually to ascertain the serviceability of fire-fighting equipment and the accessibility of signage of emergency escape routes.

d) Ensure that main power switches are clearly marked and accessible and information of any changes of their location is made available to the radio room immediately.

e) Ensure that water hydrants are clearly marked and accessible.

## 2.3    Terrorism Risk

### 2.3.1  Introduction

Terrorism is the systematic use of terror through acts of violence as a means of coercion. It is perpetrated for a religious, political or ideological goal and deliberately targets or disregards the safety of non-combatants (civilians).

As it is located in the heart of the city of Nairobi which is not only the capital of Kenya but also a business hub in the region, the university is vulnerable to acts of terrorism. In view of this, the university should put measures in place to discourage would-be terrorists.

### 2.3.2  Recommendations

a) Capture, during students' reporting time, additional information on their identity that should include certification by the religious leaders and sub-chiefs of the sub-locations of students' places of birth or residence.

b) Procure more metal detectors for screening people entering all university buildings to ensure would-be terrorists do not gain access into the university premises to execute their missions.

c) Train security personnel on antiterrorism, search procedures and actions-on.

## 2.4    Public Disorder

### 2.4.1  Introduction

The university is one of the historical landmarks that grace Nairobi. It is vulnerable to national political influence, and students' riots that cause public disorder and disturbance in the university arise from external influence or students' politics. Whenever such disorders and disturbances occur, university property is sometimes destroyed, the smooth operation of the university is compromised leading to closures of the university and a negative image of the university is created.

**2.4.2 Recommendation**

With view to curb the disorders and disturbances, the curriculum should be reviewed to incorporate issues relating to responsible citizenship and a need for patriotism.

## 2.5   Lightning

### 2.5.1  Introduction

Lightning is one of nature's worst destroyer, can crash down from virtually clear sky and need not strike a person directly to be dangerous. A typical lightning bolt contains several hundred million volts at 30,000 or more amperes. The university has campuses in lightning-prone areas which are at risk of being struck by lightning, thereby endangering the lives of members of the university community residing there. One, therefore, should stay away from open doors or windows during an electrical storm.

### 2.5.2  Precautions

a) One should avoid using a telephone or television set and keep clear of all metal objects such as pipes and electrical appliances during a storm.
b) One should not go outside in a storm.
c) If one is caught in a storm away from a protected building, it is advisable to
   - avoid tree lines,
   - stay away from unprotected storm shelters,
   - stay away from flag poles, towers, or metal fences, and
   - not wade, swim, or go boating.

### 2.5.2  Recommendation

Lightning arresters should be installed, and maintained at all times, in all university buildings in lightning-prone areas.

## 2.6   Earthquakes

### 2.6.1  Introduction

An earthquake (also known as a quake, tremor or temblor) results from a sudden release of energy in the earth's crust that creates seismic waves. The seismicity, or seismic activity of an area refers to the frequency, type and size of earthquakes experienced over a period.

Earthquakes are caused by the release of built-up stress within rocks along geologic faults or by the movement of magma in volcanic areas. Like the rest of the world, Kenya is vulnerable to earthquakes; for instance, in 27 July 2007 a series of earth tremors caused panic in Nairobi, raising concerns over the country's ability to respond to sudden major disasters.

### 2.6.2 Recommendations

a) While earthquakes are a natural calamity, all university buildings should conform to guidelines of building law as given by Architectural Association of Kenya.

b) One should exit get out of a building and go to an open space

## 2.7   Flooding

### 2.7.1  Introduction

A simple definition of flooding is a collection of water where it is not wanted. A more comprehensive definition of flooding is a general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters from the unusual and rapid accumulation or runoff of surface waters from any source.

Some of the university buildings on the main campus have been affected by the problem of flooding in their basements due to a failure of the pumping system.

Blockage of storm water drainage tunnels either due to either solid wastes within the drainage system or breakage of slabs covering the drainage system resulting in the drainage caving in also causes flooding.

### 2.7.2  Recommendations

a) The pumping system should be regularly maintained.

b) Storm water drainage systems should be properly and regularly maintained and ensure that the system is appropriately protected from external pressure.

c) A safe storage of documents and, to ensure continuity in case of a destruction of documents, information backups should be provided.

## 2.8    Information Security Risk

### 2.8.1  Introduction

Information systems have long been at some risk from malicious actions, inadvertent user errors and natural and man-made disasters. In recent years, systems have become more susceptible to these threats because computers have become more interconnected and, thus, more interdependent and accessible to a larger number of individuals. The number of individuals with computer skills is increasing, and intrusion, or "hacking" techniques are becoming more and more complicated.

The principal challenge many organizations face is in identifying and ranking the information on security risks to their operations, which is the first step in developing and managing an effective security programme. Taking this step helps to ensure that organizations identify the most significant risks and determine appropriate actions to alleviate them. Before introducing information security safeguards, one needs to be aware of the dangers to which one is exposed, the risks and likelihood of such events taking place, and the estimated impact upon one's organization were each to actually occur.

### 2.8.2  Recommendations

   a) The Director, Information and Communication Technology, should enhance the security of the information systems to and ensure backup systems are in place in case information security risk becomes real.
   b) University employees handling classified information should be properly vetted.
   c) Use of university documents should be controlled and classified information should be shared on a nee-to-know basis.
   d) Ethics and professionalism should be instilled as core values in all university employees.

## 2.9    Road Accidents

### 2.9.1  Introduction

An accident is defined as an unforeseen event that causes harm or damage. This definition includes road traffic accident whose causes include:

   a) any form of motorized and non-motorized vehicles,
   b) handcarts, and
   c) animals.

Members of the university community are vulnerable to road accidents and precautions need to be taken to prevent or lessen their negative effects on members of the university community. Some preventable accidents arise from driving under the influence of alcohol or from speeding.

### 2.9.2  Recommendations

a) University officers authorizing movement of university vehicles by signing work tickets should not—under any circumstance—authorize a driver who is under the influence of drugs including alcohol to drive a university vehicle.

b) All vehicles driven on roads within the university should be driven at a regulated speed of not exceeding 15 kph, and road signs should be put up on all roads within the university indicating this speed limit

c) All drivers in the university should comply with the provisions of the Traffic Act and the Occupational Safety and Health Act with regard to road safety.

## 2.10  Theft, Housebreak-in and Burglary

### 2.10.1 Introduction

Theft is the dishonest appropriation of property belonging to another person with the intention of permanently depriving that person of it.  Housebreak-in and burglary refer to cases whereby someone enters a building or part of a building, during the day or at night, respectively, as a trespasser with the intent to steal, inflict grievous bodily harm, rape, or commit criminal damage.

Being a public institution, the university has its property and its employees have property in their work places which is vulnerable to theft, housebreak-in and burglary. As a result, strategies should be put in place to protect the property from would-be thugs or acts of felony.

### 2.10.2 Recommendations

a) Closed-circuit television should be installed in all university buildings.

b) Access to university buildings should be restricted to only authorized persons. Proper locking mechanisms and appropriate restrictive measures in offices, stores and halls of residence should be in force.

c) University equipment should be engraved.

d) Up-to-date inventory records of assets in all offices should be maintained and their copies should be deposited with the Finance Officer, the Chief Internal Auditor and the Estates Manager.

## 2.11 Communicable Disease Outbreaks

### 2.11.1 Introduction

Disease outbreak in an institution can have devastating effects on the institution's human and animal population, causing extensive damages and expending exorbitant resources to clean up.

Infectious diseases are caused by a variety of organisms, such as viruses, bacteria, yeast, fungi, and parasites. Medical practitioners and researchers are not alone in their efforts to prevent infectious organisms from gaining entry into the institution.

People who regularly work in the university such as technicians, researchers, research staff, and students must understand how diseases may be introduced and may spread. Institutional guidelines and standard operating procedures designed to limit the risk of introducing or spreading disease must be followed by everyone.

The university is involved in extensive research on both human and animal diseases that could occasion a disease outbreak inside and outside the institution. Precaution and deliberate efforts therefore should be taken to safeguard the university from devastating effects of disease outbreaks.

### 2.11.2 Recommendations

a) The university should endeavour to provide adequate number of ambulances for emergency response.
b) Institutional guidelines and standard operating procedures designed to limit the risk of introducing or spreading disease should be displayed conspicuously.

# Disaster Management Centre

The university plans to establish a disaster management centre comprising safety officers drawn from different sections of the university headed by the Chief Security Officer. The overall responsibility for implementing the safety plan lies with the Vice Chancellor.

The proposed centre shall perform disaster management functions in consultation with the National Disaster Management team and its functions shall be:

a) the dissemination, coordination and advocacy, of the safety plan in the university at all the levels,

b) the preparation of budgets for the implementation of the safety plan,

c) the development and periodic review of specific procedures, guidelines and plans necessary for the implementation of the safety plan,

d) the development of educational materials on safety and periodic review of such materials, and

e) the preparation of quarterly reports for the University Management Board.

# Administration and Enforceability

The Chief Security Officer shall be responsible for coordinating safety activities throughout the university in the capacity as the Chief Safety Officer responsible to the Vice Chancellor.

At the college level, security officers in charge of the campuses shall coordinate safety activities with the assistance of a committee comprising the College Registrar, the Bursar, the Caretaker, the Maintenance Officer and relevant officers such as the Halls Officer. The committee should report directly to the Chief Security Officer and to the College Principal.

The Chief Security Officer shall provide information and technical advice to the university but shall not be responsible for the actual implementation of employee and environment protection programmes in individual departments. Each head of a department shall be fully responsible for the compliance of the provisions of the safety plan.

Safety is a personal responsibility and, therefore, each university employee should be responsible for the implementation of safety practices and report any safety concerns by calling any of the numbers in the University of Nairobi Fire and Safety Guidelines: 0717035268, 0750582391, and 0731453263.

The Chief Security Officer along with both members of safety committees and members of the university safety and disaster management centre shall be trained on safety issues.