



POCKET BOOK

GUIDELINES FOR SAFETY AND SECURITY IN CAMPUS

SEPULUH NOVEMBER INSTITUTE OF TECHNOLOGY

2nd Edition – January 2021



Sub-division of occupational and environmental safety & health (K3L)
PUBLIC BUREAU & BUREAUCRATIC REFORMATION
SEPULUH NOVEMBER INSTITUTE OF TECHNOLOGY



FOREWORDS

The Pocket Book of Guidelines for Safety and Security in Campus of the 2nd Edition - January 2021 is an improvement from the previous edition, which was published for the first time by SDMO in 2018. In this 2nd edition there are several improvements and additions of material adjusted to the current conditions and input from various parties, including entering the covid-19 health protocol material in the new habit era (new normal).

Occupational Safety and Health (K3) is an aspect which shall be managed and implemented in all components of the institution. ITS which owns and operates various facilities and infrastructure (including laboratories) with an academic community of more than twenty thousand people shall be able to identify risks which may harm the institution. The implementation of the K3 program at ITS aimed to prepare a management system which is ready and responsive to various safety and health risks in the ITS campus environment. The implementation of the K3 program at ITS is carried out in several general stages, namely the formulation of K3 policies, the formation of an K3 team in each unit, training on K3, and K3 socialization. Socialization is a very important activity to internalize the K3 culture for the academic community. Installation of K3 posters, K3 signs, and guidelines for the use of a light fire extinguisher (APAR) are some of the activities routinely carried out by the K3L Subdivision - BURB ITS. Making and Disseminating the K3 Pocket Book at ITS is an effort to provide complete information and understanding regarding the K3 guidelines in the ITS campus environment..

We would like to express our deep gratitude, especially to the Writer Team and all parties involved, either directly or indirectly, in the process of compiling this guidebook. Great hope with this pocket book, an understanding of the risks and steps to anticipate the dangers that may occur in the ITS campus area, as well as to prevent accidents and losses suffered by the academic community..

Always prioritize the Occupational Safety and Health in every activity on ITS campus.

Thank you



EMERGENCY CALL

Use the following emergency call numbers in case of an emergency in the ITS campus environment

- ❖ **ITS EMERGENCY CALL : 031-5917-3000**
- ❖ **ITS COVID-19 TASK FORCE : 081-1301-0103**
- ❖ **ITS MEDICAL CENTER : 031-592-7547, 031-592-5405**
- ❖ **SURABAYA EMERGENCY CALL : 031-112**
- ❖ **KEPUTIH FIRE BRIGADE (PMK) : 031-594-8925**
- ❖ **SURABAYA HAJJ PUBLIC HOSPITAL : 031-592-4000**



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Writer

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CHAPTER -1

INTRODUCTION TO OCCUPATIONAL AND ENVIRONMENTAL HEALTH & SAFETY

- Occupational and Environmental Health & Safety (K3L) is part of an effort to create a workplace which is safe, healthy, and free from environmental pollution. Good K3L implementation is able to reduce and or free workers and workplaces from occupational accidents and occupational diseases so that in the end it can have an impact on increasing work efficiency and productivity..



- Safety begins with the word 'safety' which means freedom from a person from an accident or near-miss. Philosophically, work safety can be interpreted as a thought and effort to ensure that workers and the environment around them are safe in a work activity. Meanwhile, from a scientific point of view it is defined as knowledge and application in an effort to prevent the possibility of accidents and occupational diseases from an early age. The term occupational health itself according to Health Law no. 9 of 1960 is a condition which aims to ensure that workers obtain the highest degree of health, whether physically, spiritually, or socially, with efforts to prevent and treat diseases or health problems caused by their work and work environment..



- Work accidents not only have an impact on the loss of a company or organization, but can also cause suffering to workers, whether mild, moderate or severe in a short or long term. In general, work accidents can occur due to two things, namely:

1. Unsafe condition. Is an unsafe condition when interacting with equipment, electronic media, materials, work environment, work processes, and the like.
2. Unsafe action. In general, in the form of dangerous actions from humans intentionally or not, which is caused by the lack of knowledge and skills of the implementer in the work being handled, subtle disabilities, fatigue, weakness in the immune system due to imbalance with the workload, and it can also occur attitude and work behavior that is not good or does not comply with established procedures.



Save from the two things above, several other important things related to the high number of occupational accidents and occupational diseases are:

1. K3L experts are not involved in the work business process, especially works that have high potential hazards.
2. Poor supervision of the implementation of K3L in the field.
3. Inadequate quality and quantity of availability of personal protective equipment (PPE).
4. Poor of discipline of workers in complying with the provisions and procedures of K3L that have been prepared.
5. Poor of commitment from all parties regarding the importance of implementing K3L in creating safe and healthy conditions in all aspects related to work.



- K3L may not only be applied in industrial work environments but can also be applied in office environments. The purpose of implementing K3L in the office environment is that the safety and health of employees can be guaranteed and protected by making efforts to prevent occupational accidents and diseases due to work in the office. The application of office K3L can create a safe, healthy and comfortable office atmosphere so that employees become more productive and performers. One of the regulations that regulates office K3L standards is the Minister of Health Regulation No. 48 of 2016 concerning Office Work Safety and Health Standards. The application of K3L in offices needs to be carried out in this modern era, considering that employees carry out activities in the office at least 8 hours a day, and the types of work and modern office work equipment are increasingly complex, thus triggering hazards if there is no management that regulates the safety and health of employees..

The potential hazard which often occurs in office work environments are as follows:

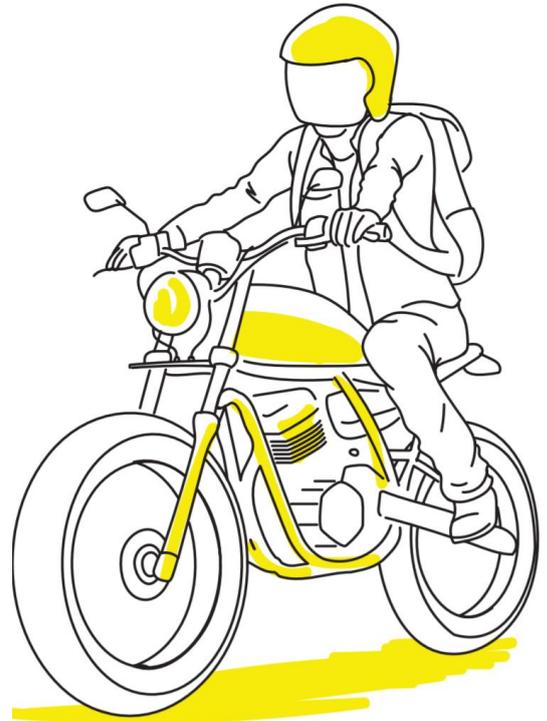
1. Mechanical hazard.
2. Physical hazards.
3. Electrical hazards.
4. Waste (toxic / garbage) hazard.
5. Hazardous chemical hazards.
6. Biological hazards.
7. Ergonomic hazards.
8. Psychosocial hazards. Apart from the above, it is possible that there are other types of potential hazards whose impacts need to be anticipated and watched out for.

CHAPTER - 2



CAMPUS DRIVING SAFETY GUIDELINES

- a. Check the overall condition of the vehicle before driving.
 - b. Using SNI helmets for motorcyclists and attaching seat belts for car drivers.
 - c. It is advisable to use a jacket, shoes, gloves, knee and elbow protectors, nose protection
 - d. Maximum vehicle speed of 20 km / hour.
 - e. Obey existing traffic signs and road markings.
 - f. Follow the left lane and if you want to overtake, you must go through the right lane, turn or turn, you must turn on the turn signal so that other drivers know the direction of our movement
 - g. Bring the completeness of motor vehicle documents.
 - h. Do not use communication tools while driving.
 - i. Turn on the day and evening lights for motorbikes.
 - j. No rush when driving a vehicle on campus.
 - k. Avoid driving at midnight / early morning. If you have to, don't drive alone and avoid crime-prone areas.
 - l. Parking at a predetermined location, locked and not leaving any items on the motorbike.
- Accidents may occur anywhere, both on roads, residential roads, and even roads on campus. Orderly behavior of road users is one of the factors to reduce accidents between road users. Campus is a teaching activity environment which is always busy with campus residents every day. Traffic rules and signs are the main requirements to prevent accidents.





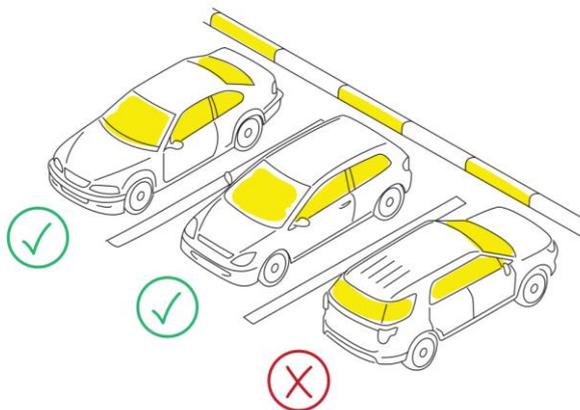
- In an emergency situation when an accident occurs on campus, there are several procedures must be known and performed by the rider as a victim and also for the driver who knows about the accident.

For accident victims:

- a. Calm down and don't panic when you fall or get hit or concentrate on being awake and alert.
- b. Pay attention to the surrounding conditions, if it is in a safe position and if there is still energy and if there is no injury, immediately pull over to the side of the road or in a safe and shady place.
- c. Bring luggage that can be carried, for example a cellphone and bag or something.
- d. Wait for help from people around the site.

For riders who have encountered accidents:

- a. Immediately stop the vehicle and pull over to the side of the road and don't forget to lock the vehicle to be safe before giving help.
- b. Secure the victim to a shady and comfortable place and give suggestions to the victim to calm down while waiting for medical assistance. If necessary, invite people around the incident to help evacuate the victim.
- c. Contact the campus security officer or Emergency Response for immediate assistance.



- **Vehicle Parking Guide**

- a. Only park in areas where there are parking guards.
- b. Do not leave keys and valuables on the vehicle.
- c. Add double lock to increase vehicle safety.
- d. Park the vehicle facing out for cars and motorbikes.

CHAPTER - 3



FIRE DISASTER SAFETY GUIDE

- **Source of Fire**

Fire is a fast chemical reaction (oxidation) which is formed from 3 (three) elements, which are: heat, air and fuel that cause or produce heat and light.

- a. **Oxygen**

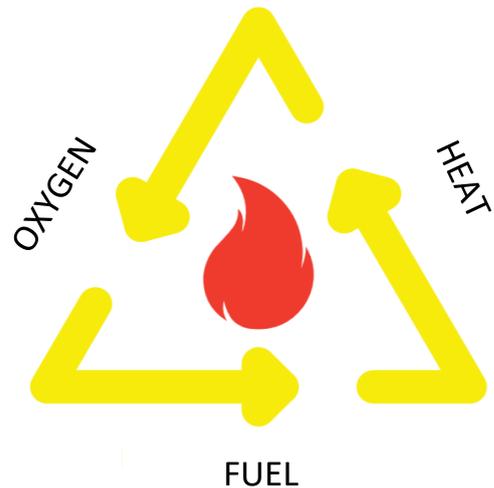
The source of oxygen comes from the air, which requires at least about 15% by volume of oxygen in the air to produce combustion.

- b. **Heat**

The heat source is needed to reach the ignition temperature so that it can support the fire. Sources of heat include: electrical energy, electric sparks, solar heat, hot surfaces, friction, exothermic chemical reactions, compressed gases..

- c. **Fuel**

Fuel is all objects that can support combustion. There are three forms of fuel, namely solid, liquid and gas.



- Fire is a disaster which may occur anytime and anywhere. Fire is a form of flames incident, both small and large at a place, situation and time that is undesirable and generally detrimental and difficult to control. Fires if not controlled from the start, it may cause extensive damage due to the nature of the fire which moves quickly and is difficult to stop when it gets bigger.

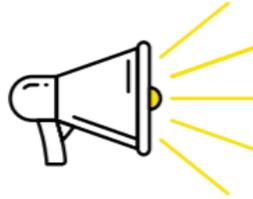


• When Seeing Fires in Buildings



1.

If the fire is still small, immediately extinguish the fire with a nearby lite fire extinguisher or other fire extinguisher.



2.

Tell people around (shout if necessary)



031 - 5917 3000

4.

Contact ITS Emergency Call immediately to confirm and assess the situation



3.

Immediately activate the fire alarm when the fire getting bigger



5.

Immediately run to emergency exit



6.

Assemble at the nearest meeting point



- **When Hearing the Fire Alarm**



- a. Keep calm and wait for instructions from the occupied building's emergency response team.
- b. Stop any activities, leave things behind, and go to the emergency exit.
- c. When on the top floor. don't jump through the window
- d. If you are trapped in the smoke of the fire, then continue to the emergency exit by taking short breaths. avoid smoke by creeping or crawling.
- e. When you break through the smoke from the fire, cover your life and mouth with a damp cloth.
- f. Do not run back and forth to avoid crashing into the people behind.
- g. Immediately follow the evacuation route to the meeting point and wait for further instructions from the K3 team.
- h. Do not use the lift as an emergency exit.



- **Using APAR (Lite Fire Extinguisher) When Seeing Fires in a Buildings**

The APAR parts need to know:

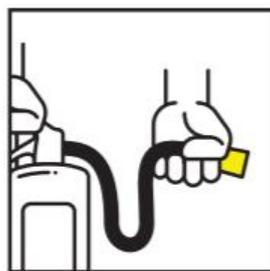


Always remember the following PASS procedures:



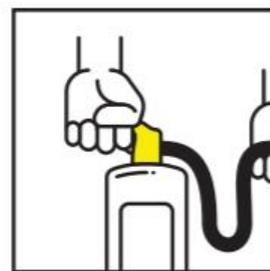
P

Pull the pin



A

Aim low at the



S

Squeeze the



S

Sweep side to side



- **Knowing HYDRANT**

Hydrant is a fire extinguishing system that uses water as a medium. Systemically, the hydrant uses water media, the system is no different from the existing water pump system at home, which consists of:

1. Water Reservoir
2. Distribution system
3. Hydrant pump system

In cases of widespread fire and the fire is difficult to control with a light fire extinguisher, a hydrant can be used to help reduce fires from spreading.



The procedure for using a Hydrant is as follows:

1. Remove the nozzle, hose and valve hydrant regulator from the hydrant box.
2. Two officers brought the nozzle and unrolled the hose to the nearest fire scene and attached the nozzle to the hose.
3. Another officer attaches the hose to the hydrant and prepares to adjust the hydrant valve with a regulator.
4. Two officers near the nozzle immediately got ready in stance to control the direction of the hydrant water, and gave instructions to open the hydrant valve to the officer on duty on the hydrant.
5. Officers who get directions to open the hydrant valve, immediately open and monitor the water pressure is sufficient, not too big or small or must be closed
6. If the water does not come out, there must be another officer who immediately goes to the location of the hydrant pump and makes sure the jockey pump is working, the main pump or backup pump is working, and check the pressure in the hydrant pipe. If the pressure is not enough, even though the pump is working, immediately check for pipe leaks and immediately close the pipe valve leading to the leaky pipe, and if necessary, immediately communicate with the team near the hydrant to change the location for using the hydrant.
7. If the hydrant system does not work, immediately call FIRE BRIGADE or the FIRE BRIGADE backup car owned by the ITS Infrastructure and Facilities Bureau..



• Automatic Sprinkler System (indoor)

1. In constructing or renovating a building, it is expected that a sprinkler system is connected to an active hydrant system.
2. Can use a sprinkler head type that breaks the valve when exposed to fire and opens the water flow without the need for a sensor and there is a pipe valve connected to the sprinkler system, to be able to close the water flow when the fire is over. Immediately replace a broken sprinkler head and reopen the closed sprinkler pipe valve.
3. If there is no hydrant system, you can use an automatic CO2 extinguishing system, with a sensor in case of fire and will open the CO2 cylinder valve and spray CO2.



• Alarm System



1. Able to use single and manual alarms located in easy to see and reach positions.
2. Better if it is connected to a smoke or fire detector that automatically sets off an alarm if there is a fire.
3. It is even better if you can connect with the SKK ITS Post to speed up handling of large emergencies.
4. Perform evacuation procedures if you hear the sound of an alarm, do not run, stay away from glass and hazardous materials, and report to the officer if there are victims or someone is left behind.



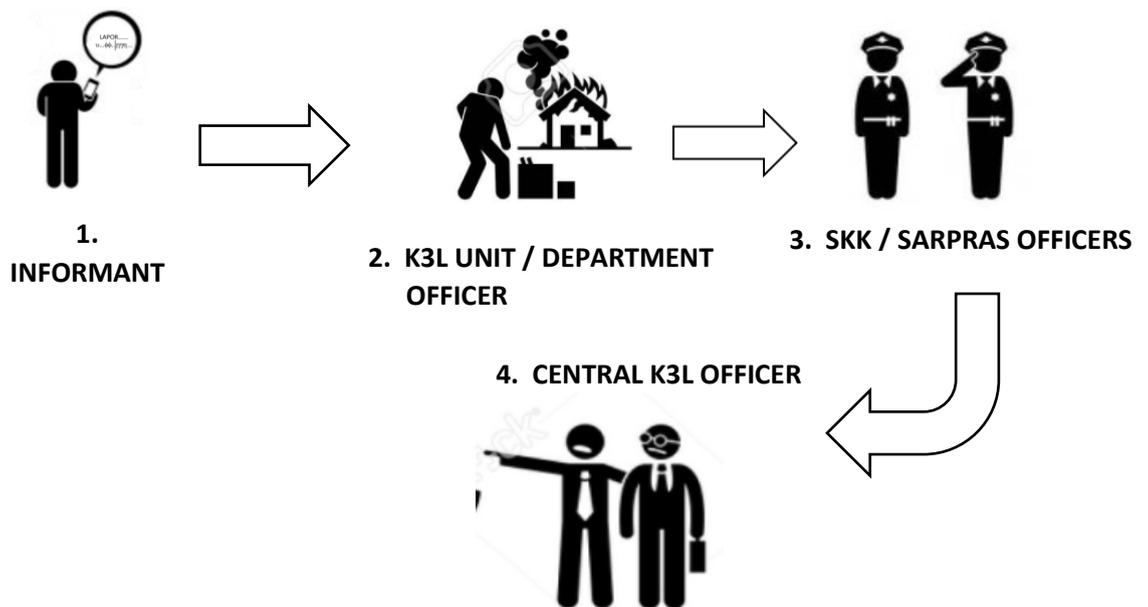
• Fire Disaster Prevention Procedure

In the prevention of fire disasters, the following important points are needed:

1. Make sure there are no exposed copper wiring.
2. Make sure the cables and all installations used are suitable and do not cause overload or loose heat and cause sparks.
3. Keep the outlet away from flammable or short circuit materials.
4. Put a lid on the socket.
5. Make sure Hazardous materials (B3) such as chemicals, hand sanitizers, etc. are covered and there is no spillage.
6. Keep B3 away from heat and electricity sources.
7. Make sure the room for storing B3 materials has a blower / exhaust fan for changing air in and out, with a distance between the entrance and exit doors of min. 5meter.
8. Pastikan ruang kertas atau arsip memiliki suhu dan kelembaban yang baik.

• Fire Disaster Management Procedure

In a fire emergency condition, each competent authority is obliged to comply with established procedures to accelerate handling and readiness in carrying out their respective roles as follows:





1. Informant
Anyone who sees a fire must immediately report it to the HSE Unit / Department Officers in the workplace.
2. K3L Unit / Department officers
 1. Immediately monitor fire conditions, if deemed able to be handled immediately extinguish it with the nearest fire extinguisher.
 2. If you feel that the fire is big enough, immediately turn on the alarm and make sure the SKK officer knows about the condition.
 3. Carry out evacuation procedures, do not run, avoid glass and hazardous or flammable materials, direct building users to the nearest gathering point.
 4. Immediately contact the medical center or Hajj Hospital if there are victims.
 5. The K3L Unit / Department officers carried out the investigation process the cause of the fire to appear with the Central K3L Officer after the fire was over.
 6. Unit / Department K3L officers coordinate with related Units / Departments to implement the same fire prevention process.
3. SKK officers
 1. When you hear an alarm is active or get an emergency call, immediately confirm the location of the incident, the existing fire conditions.
 2. Prepare the fire extinguisher tube equipment, masks and gloves.
 3. Immediately go to the location of the isolation area and some others put out the fire together.
 4. If the fire is too big, immediately contact the infrastructure services department of the ITS Infrastructure and Facilities Bureau to provide a plant sprinkler car.
 5. If the watering car cannot handle it, immediately use a hydrant or contact the nearest PMK and keep using the watering car for the first treatment while waiting for DAMKAR to prevent the fire from spreading.
4. Central K3L Officer
 1. Perform monitoring of the fire fighting process.
 2. Perform an investigation on the cause of the fire with the K3L Unit / Department officers.
 3. Provide solutions and recommendations regarding the same fire preventiona.

CHAPTER-4



EARTHQUAKE DISASTER SAFETY GUIDELINES

Earthquakes are vibrations or shocks that occur on the earth's surface due to the sudden release of internal energy which creates seismic waves. Earthquakes are usually caused by the movement of the Earth's crust (the Earth's plate). The frequency of a region, refers to the type and size of earthquakes experienced over a period of time. The factor of the earthquake is usually due to natural factors.

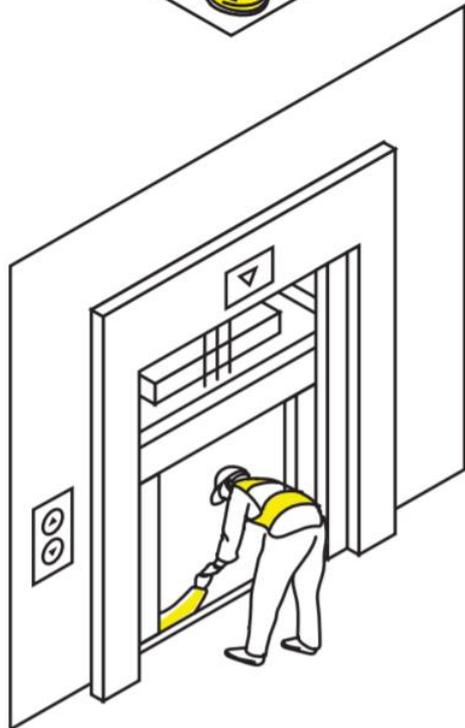
- **If an earthquake occurs while inside a building**



- Stay calm and don't panic.
- Follow the instructions given by the emergency response team.
- Get out of the building, whenever possible. If not, stay calm and don't panic.
- Protects the limbs under the table, corner of the room or wall. Then wait for the shaking to stop and it is safe to leave the building.
- Avoid partitions, glass, window, hanging shelf, filing cabinet, lamp, cable and office equipment that can fall easily.
- When in the corridor, walk while squatting, protect the head with arms and protect the neck with hooked hands.



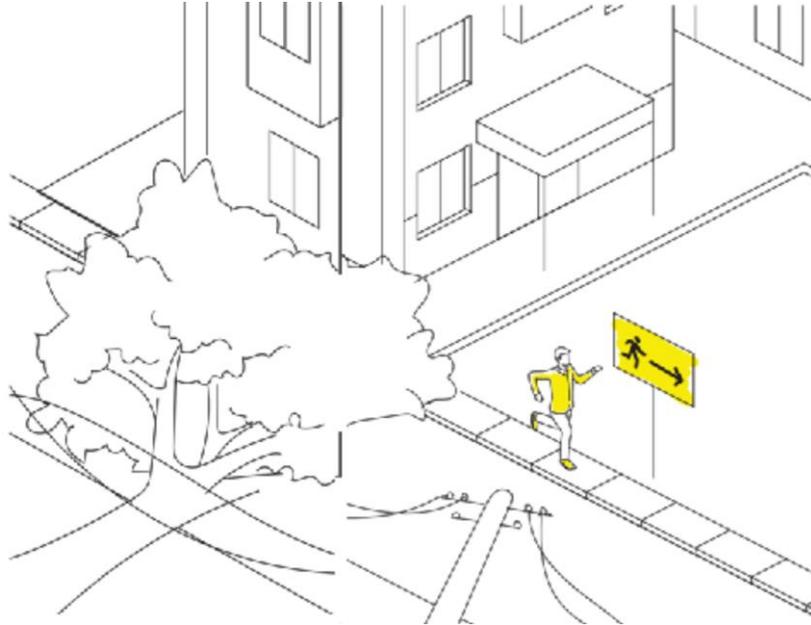
- If an earthquake vibration occurs while inside an elevator



- a. Stay calm and don't panic.
- b. If possible, immediately exit the elevator on the nearest floor. Find a shelter and keep away from glass areas. then go to the meeting point.
- c. If not possible exit. press the emergency button that has been provided. then lower your body to the floor. protect the head and neck.
- d. Do not force to open the elevator door. Wait for the building clerk to come to release you.



- **If an earthquake vibration occurs while outside the building**



- a. Stay away from tall trees or tall structures that can easily fall / fall, such as electricity poles, flag poles, signposts and signs.
 - b. Stay away from buildings and areas where objects can fall, electric cables or the electric shock danger.
- Earthquake Disaster Management Equipment (PERKA BNPB 2009).
 1. Jaws of Life
A hydraulic arm that can grasp to cut, and stretch to loosen things
 2. Life Detector
All the tools to find out the pulse of someone's life



3. **Buldozer**
Used to remove building debris, trees or anything else caused by an earthquake
4. **Scope Loader**
Used to remove building debris, trees or anything else caused by an earthquake
5. **Beco**
Used to remove building debris, trees or anything else caused by an earthquake
6. **Log Chainsaw**
To cut branches or fallen trees
7. **Concrete Breaker**
A concrete tool or machine that is used to dismantle or destroy concrete (concrete) floors or asphalt roads, the Jack Hammer is widely applied to demolition work.
8. **Loader Fork**
Used to move building debris, trees or anything else caused by an earthquake
9. **Bailey Bridge**
A high quality lightweight steel frame bridge that is movable and generally used as a temporary emergency bridge. The Bailey bridge structure has a system of length per panel of 3.048 meters.
10. **Clamshell**
Used for working of loose materials, such as sand, gravel, mud and others.
11. **Hand Sprayer Pump**
Used to wash or wet an area or person

CHAPTER-5



WIND DISASTER SAFETY GUIDELINES

The type of this disaster is part of the growth process of cumulus nimbus rain clouds that are formed due to intensive heating. The tornado threat is difficult to predict because it is a local scale atmospheric phenomenon. Some of the consequences of the tornado disaster are damage to houses and fallen trees.

- **If there is a strong wind while outside a building**



- Stop driving when on a way.
- Take cover next to a building or under a secure, sturdy shelter.
- Stand far from the highway, the railroad, the edge of a cliff / tall building or the edge of a pool due to blowing might throw you off.
- Use handrails if available and avoid being in high positions such as roofs / balconies.
- Keep an eye for flying objects such as debris, zinc sheets, sharp wood chips or glass chips.
- Avoid anything that might fall / fall, including vehicles, tree branches or poles.



- **If There Is A Strong Wind While Staying In A Building**



a. Close and lock windows and doors.



b. Turn off all electricity and electronic device.



c. If you feel like lightning is about to strike, immediately bend down, sit down and hug your knees to your chest.



d. Don't get down on the ground.



- Wind Disaster Management Equipment (PERKA BNPB 2009)
 1. Beco
Used to remove building debris, trees or anything else caused by an earthquake.
 2. Log Chainsaw
To cut branches or fallen trees.

- Disaster Management Preparation
 1. Build buildings with solid foundations and materials
 2. Increase education in the ITS environment about wind disasters and how to survive
 3. Noticing the signs of a tornado, such as the air feeling hot, then dark clouds appear that last until the afternoon

- During the Disaster Occurrence
 1. Put the stuffs into the house and lock all doors and windows
 2. Turn off all electrical and electronic equipment.
 3. If there is the potential for lightning to strike, immediately bend down, sit down and hug your knees to your chest
 4. Don't get down on the ground
 5. Avoid buildings / objects with tall structures, electric poles, large trees, billboards, and so on.
 6. Immediately enter into a house or sturdy building

- After the Disaster Occurrence
 1. Make sure no family or friends are injured
 2. If there are victims, immediately get first aid and contact the ITS Medical Center or the nearest hospital
 3. Immediately notify the competent authorities if there is any damage related to electricity, chemicals, and other damage
 4. If on a ride, keep continue and keep avoiding tall structures

CHAPTER-6



FLOOD DISASTER SAFETY GUIDELINES



Flood is an event when water fills an area that is usually not flooded for a certain period of time. Floods usually occur because of continuous rainfall and result in overflowing of river, lake, sea or drainage water due to the amount of water that exceeds the capacity of the water holding media from the rainfall. In addition, it can also be caused by human activity. Such as reduced water catchment areas due to land use change, deforestation that increases erosion and cancellation of rivers, as well as irresponsible behavior such as throwing garbage in rivers and establishing shelters on riverbanks..

Flood Disaster Management Equipment (PERKA BNPB 2009)

1. Inflatable boat.
As the media of rescue transportation.
2. Buoy.
Help in pulling the victim's body in the rescue process.
3. Water Pump.
To remove residual flooding in the building
4. Fogging Machine.
For post-flood mosquito eradication.
5. Beco.
Used to move building debris, trees or anything else caused by an earthquake.

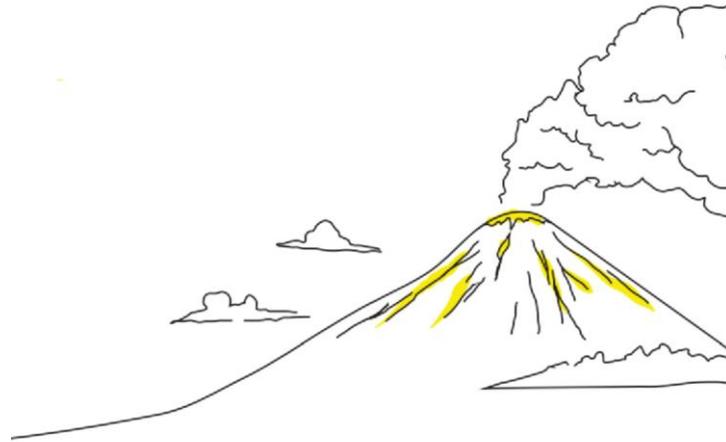


6. Log chainsaw.
To cut branches or fallen trees.
 7. Vertical Rescue.
For the rescue process from above.
 8. Hand Sprayer Pump.
Used to wash or wet an area or person.
 9. Garbage truck.
To immediately clean up the flooded area.
- Preparation for Flood Disaster Management
 1. Knowing the level of vulnerability in which areas are likely to be flooded, as well as how to handle them when a flood occurs.
 2. Study evacuation routes and higher places and avoid flooding.
 3. Keep important documents in a safe place.
 4. Pay attention and prepare to make it easier to shut it down in case of flood.
 - During the flood
 1. Immediately evacuate to a higher and stronger place, don't run, stay calm.
 2. Save the items that are still instructed by the authorities. Unplug the tools that are still connected to electricity. Do not touch electrically charged equipment when you are standing on / in water.
 3. If there is an evacuation order and you have to leave the house, do not walk in water currents.
 4. If you must walk on water, walk on a stationary footing. Use a stick or similar to check the density of your foothold.
 5. Don't drive the car over flood water.
 - After the Flood
 1. Avoid floodwaters due to possible contamination of hazardous substances and pay attention to electrical installations because of the possible threat of electric shock.
 2. Avoid moving water.
 3. Avoid land that has just receded, there could be a possibility of land subsidence.
 4. Pay attention to the health and safety of family and colleagues by washing your hands with soap and clean water if you are exposed to flood water.
 5. Clean the dwelling and home environment from debris after flooding.
 6. Perform mosquito nest eradication (PSN).

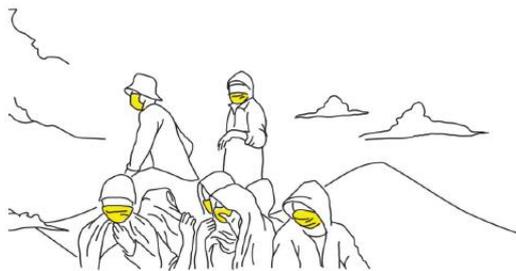
CHAPTER-7



MOUNT ERUPTION DISASTER SAFETY GUIDELINES



The existence of volcanoes that are still active in the territory of Indonesia and especially in East Java still exist and has the potential for disasters at any time. Although the location of the campus is still considered far from the campus area, it still has the possibility of the impact of the eruption reaching the campus area depending on the level of the eruption strength which can be up to thousands of kilometers.



The correct way of wearing a mask



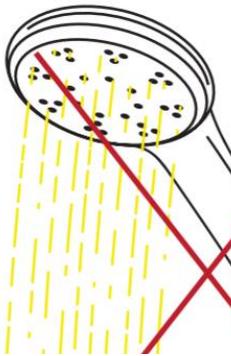
The procedures taken in the event of a volcanic eruption are as follows:

- Avoid areas where activities are prone to volcanic eruptions.
- If volcanic ash particles reach the campus area, protect yourself from volcanic ash.
- Use a mask or cloth to cover your nose and mouth.
- Wear clothes that protect the whole body.
- Avoid wearing contact lenses (soft lenses) when it rains volcanic ash.
- Immediately seek medical help when exposed to volcanic ash or experience symptoms of allergy from the ash.

CHAPTER-8



LIGHTNING STORM DISASTER SAFETY GUIDELINES



- a. When lightning is showed up, immediately seek shelter, closed building or premises.
- b. If you are in a car with a cap (not an open cap), stay inside the car with the window closed
- c. Avoid shelters that are not completely closed or narrow shelters.
- d. The position of shelter should be a few meters from open windows, sinks, toilets, water tubs, showers, electric boxes and other appliances
- e. Do not bathe or use the shower during a thunderstorm.
- f. Avoid using wire phone, unless under extreme circumstances, as lightning can travel through the telephone cables.

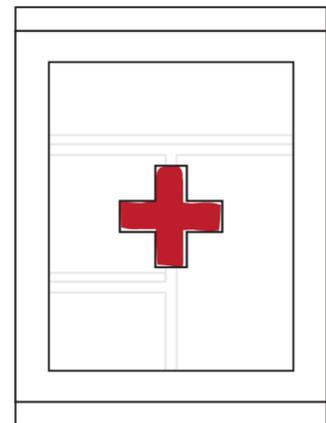
CHAPTER-9



FIRST AID GUIDELINES FOR ACCIDENTS (P3K)

Accident First aid is the first aid that must be immediately given to victims who have an accident or sudden illness precisely and right before the victim is moved to the reference place.

- The purpose of First Aid is:
 - a. Training someone in handling accidents properly and quickly.
 - b. Saving the victim's life.
 - c. Preventing additional damage or accidents due to improper help.
 - d. Relieving the suffering of the victim.
 - e. Helping in accidents or illnesses that come suddenly.
 - f. Maintaining the victim endurance.



- Basic Principles of Aid Action

In First Aid, there are basic principles in performing aid actions known as PATUT

P The helper secures himself first before taking actions.

A Secure the victim from distraction at the scene, so that he/she is free from danger

T Mark the scene of the incident so that others know that there was an accident

U Try to call an ambulance, doctor, hospital, or the competent authorities

T Perform Aid actions for victims in the most correct order



- Types of Accidents Handleable by First Aid

The following are some of accidents handleable by First Aid:

1. Shock

A condition which occurs due to blood loss, extreme pain, and psychological disturbance. Common signs of Shock are:

- a. The skin and face of the victim is pale and felt cold.
- b. The pulse is fast.
- c. Rapid exhalation.
- d. The victim does not aware of their surroundings and often yawn.
- e. The victim feels thirsty.
- f. The victim is unconscious or lack of consciousness.

Preventive and Corrective Measures to the Shock Victims:

- a. Lay down the victim on his back with the head higher than the feet.
- b. Cover the victim's body with a thick blanket to keep it warm,
- c. If the victim is still conscious, give him a warm drink. If there is a wound in the stomach, never give them drink.
- d. If the victim is unconscious, put the Ammonia under his nose,
- e. As much as possible eliminate feelings of pain,
- f. Relocate victim to a safe place carefully.

2. Bleeding

Arterial bleeding is pink, it means that the blood comes out by pouring out at the heart rate. The bleeding veins are dark red in color and come out fast without any pouring. Actions taken for External Bleeding:

- a. Pressing with Pressing Bandages. The procedure is by placing the gauze just above the wound, then wrapping it firmly with a bandage. The gauze will cover and press the bleeding. Vein bleeding and bleeding that is not heavy can be stopped this way. If you don't have gauze, you can also use a clean handkerchief. If there is bleeding in the hands or feet, they must be lifted up (a position higher than the location of the heart).



b. Pressing from Above the Pressure Place

- If there is a head bleeding above the eyes, then press it in front of the ear.
- If cheek bleeding occurs, press on the curve of the lower jaw, about 2-4 cm in front of the corner of the jawbone.
- If there is bleeding in the neck or throat, then place your thumbs behind your neck, your fingers on the edge of your throat. With one finger on top of the cut and one finger on the bottom, then press both fingers toward your thumb.
- If there is bleeding in 2/3 parts of the forearm and hand, then place the fingers between the elbows and the armpits on the inside of the upper arm, the thumb on the outside. Press your thumb and fingers against the bones between your thumb and fingers.
- If there is bleeding in the shoulder, armpit, and upper arm, place the thumb or fingers in the indentation behind the victim's shoulder blades, press on the surface of the first rib.
- If bleeding occurs in the thighs, calves and lower legs, then place the palms under the groin of the thighs, where the lower part arterial pressure is located.

c. Restrain the Bleeding with a Tourniquet

- Signs of bleeding in the lungs be detected if the victim coughs up blood.
- Bleeding in the stomach can be detected if the victim vomits blood.
- To identify if there is bleeding in other internal organs, it can be seen from the general signs in victims, including:
 - ✓ Feelings of fear and anxiety
 - ✓ Feelings of thirst and limp
 - ✓ Pale face - Memory loss
 - ✓ The pulse is fast



- The first aid may be performed is:
 - ✓ Call the Doctor as soon as possible
 - ✓ Don't be shock
 - ✓ Don't stimulate more bleeding
 - ✓ If the bleeding is in the stomach, do not feed anything to the mouth

3. Breathing stop (Asphyxia)

The cause of breathing stop is obstruction of air entering the lungs, paralysis of the respiratory center in the brain, red blood cells unable to work properly, and lack of oxygen. The first aid can be performed is as follows:

- Relocate the victim to a clean air space
- Remove any objects that clog the throat
- Cover the victim's body with a blanket so that it is warm
- Perform respiratory assistance

4. Electric Shock

Signs of an electric shock include loss of consciousness, breathing stagnation, occasional severe burns, and small bleeding on the skin. The assistance to release the victim from the electric current is as follows:

- First of all remove the contact between the victim and the electric current carrier. Do not touch the victim's hands directly, disconnect the fuse immediately if it located nearby. If there is no fuse, do the following: - Stand on dry planks, or on dry clothes. - Wrap your hands in dry and thick clothing, or wear rubber gloves. - Pull the victim on dry clothing to remove the victim from electric current carrier.
- Next, if the victim is not breathing, perform a respiratory assistance. respiratory assistance must be performed until the victim breathes again.
- After the victim breathes again, bandage the wound.



5. Respiratory assistance

Guidelines for people who perform respiratory assistance:

- The respiratory assistance must be performed immediately because time is very precious.
- It must be performed in the correct way because if it is performed in an improper way then the help has no use at all.
- respiratory assistance must be performed continuously until the victim can breathe again.
- If respiratory assistance leads to results, do not stop it because sometimes breathing may stop again.
- The victims must be continuously monitored and assisted until they can breathe again normally. In general, respiratory assistance is carried out using CPR (Cardio Pulmonary Resuscitation) with the following steps:



1. Alternating your fingers, place your hands in the center of the victim's chest. Perform chest compressions quickly and without stopping. Press down about 4 cm 30 times.

2. Open the airway by lifting the victim's chin with one hand, gently pressing the victim's forehead with the other hand. See, hear and feel the victim's breath.

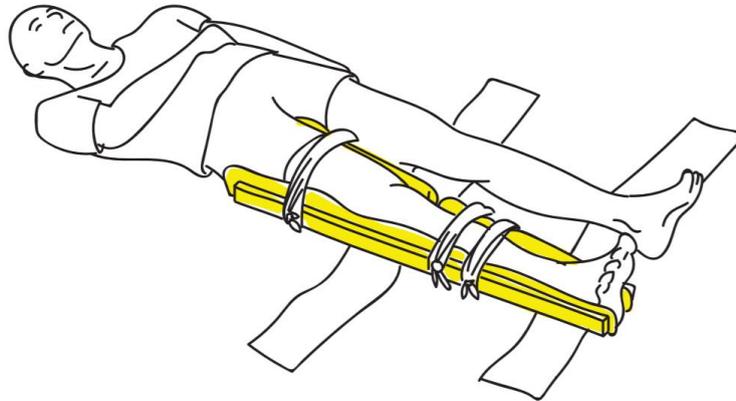


3. If the victim is not breathing then cover the victim's mouth tightly with yours, pinch and close the victim's nose. Let the chin lifted and the forehead held with the other hand. Next give two breaths (each breath should take about 1 second) make the victim's chest expand.





6. Fracture



The symptoms of a fracture are pain at the fractured area (especially if you move it), it is impossible to move it, and the fractured area swells up. For this type of accident, the rescuer must be careful in taking action. As for the things that can be performed are as the follows:

- Lay down the victim and give him a blanket
- If there is bleeding, stop the bleeding immediately.
- If not urgent, do not move the victim.
- Next apply the spalk
- Do not try to pull the bone tips for re-placement, since only a doctor may do this.

CHAPTER-10



HAZARDOUS CHEMICAL ACCIDENT SAFETY GUIDELINES

Chemicals are substances that we can encounter if we are on the ITS campus, and in several departments at ITS, handling chemicals is indispensable. The following is how to handle it in case of a chemical accident:

- **How to Overcome Chemical Poisoning If Toxins Enter Through The Mouth**

- a. Give drink of water or milk from 2 to 4 glasses.
- b. If the victim of poisoning is unconscious, do not put anything (in the form of food / drink) through the victim's mouth.
- c. Insert the index finger into the victim's mouth while moving the finger at the base of the tongue in order to make the victim vomit, unless the victim is poisoned by kerosene, gasoline, lye or acid.
- d. Give 1 tablespoon of antidote and a glass of warm water to the victim. Antidote is made of 2 parts activated charcoal, 1 part magnesium oxide, and 1 part tannic acid (in powder form).
- e. Take the victim to the hospital immediately when it gets worse

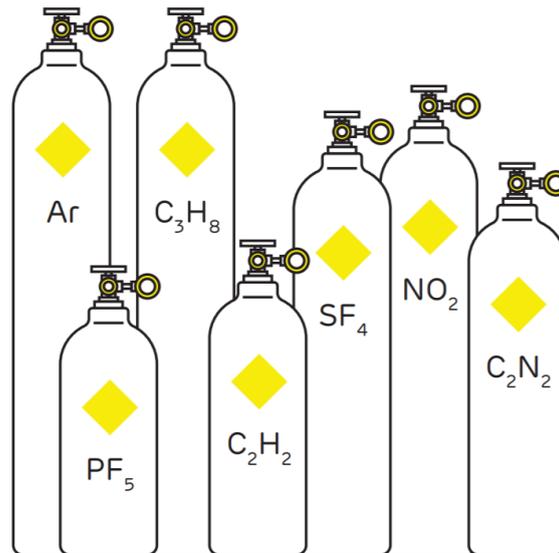
- **How to Overcome Chemical Poisoning If Toxins Entering Through The Skin**



- a. Wash the affected body part with clean water for at least 15 minutes.
- b. Remove the clothing that has been exposed to chemicals.
- c. Do not apply sodium bicarbonate oil, butter or paste, except for higher / certain other poisoning.
- d. Take the victim to the hospital immediately when it gets worse



- **How to Overcome Chemical Poisoning If the Toxic Material Is a Gas**



- a. Before providing aid, make sure from the beginning the helper has used personal protective equipment against poisonous gases or minima using a mask as a cover for the nose and mouth.
- b. Relocate victim outside contaminated space to provide fresh air as possible
- c. Relocate victim outside contaminated space to provide fresh air as possible
- d. Take the victim to the hospital immediately when it gets worse

CHAPTER-11



ELECTRICAL ACCIDENT SAFETY GUIDELINES



Electronic equipment is a very common thing we encounter in our lives, and is often considered a necessity for some people. Accidents or injuries that occurs when using electronic equipment due to improper use should be reduced, given the high need for electronic equipment.

• First Aid Guidelines for Electrical Accidents

Nowadays, electricity can be said to be a necessity that we always use every day. The application of K3 in the use of electronic and electrical equipment is an important thing to prevent accidents. The following are things we can do in handling victims of electric accidents:

1. Pay attention to the surroundings and condition of the victim, avoiding direct touching or holding the victim.
2. Find the power source and turn it off. If the source of electricity is in the victim's body, then remove it by using an object that does not conduct electricity
3. Relocate the victim to a safer location



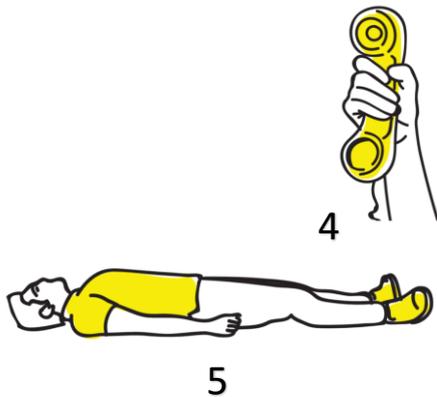
1



2



3



4. Contact the nearest medical center.
5. Performing care while waiting for the medical to come by laying down the victim in a supine position, the position of the legs is set so that they are higher than the head. Check breathing and heart rate, if it stops then perform Cardio Pulmonary Resuscitation (CDR).

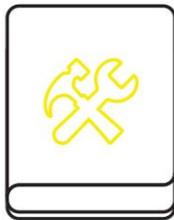
• Wise Use of Electricity

1. Turn off lights, air conditioning, and other electrical appliances that are not being used.
2. Do not put too much electrical load on the socket. Use according to the number of holes available.
3. Install the cover on a wall or table embedded socket
4. Arrange the power cables so that it does not fall on the floor where it can cause someone to trip, even if it is necessary to cover it with duct tape.
5. Do not plug in or remove electricity with wet hands.
6. Unplug all power cables when going on a long vacation.





- **Electrical Tools and Devices Usage Guidelines**



110V

220V



- a. follow the manual for using the electrical equipment

- b. Pay attention to the electric power used, because if it exceeds the power capacity it will have the potential to cause a fire

- c. Switch off any new electrical devices, remove them from the socket to prevent the fire sparks appear



- d. Place an electrical device in an open space so that it can dissipate heat energy properly



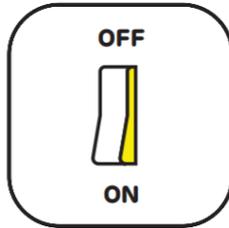
- e. Do not touch electrical devices by wet hands



- f. Do not insert anything other than the plug into the socket



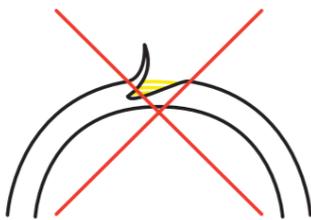
- g.** Do not place electrical devices near chemicals, liquids and flammable materials.



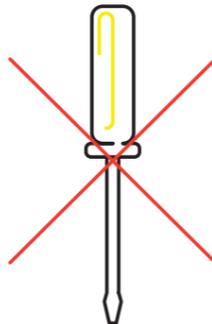
- h.** Turn off all electrical equipment when the lights are out



- i.** Unplug electrical equipment from the wall outlet when not in



- j.** Do not use an electrical device with an exposed cable.



- k.** Don't repair your electrical equipment by yourself if you don't know how.



HEALTH PROTOCOLS IMPLEMENTATION GUIDELINES IN THE NEW NORMAL ERA IN CAMPUS



New Normal is a change in behavior or habits to continue performing activities as usual but by always implementing health protocols in the midst of the COVID-19 pandemic. The basic preventive steps to avoid contracting COVID-19 are washing hands with soap and running water or with a hand sanitizer, not touching the face with unwashed hands, applying physical distancing, and wearing masks in every activity, especially in public places.

- **New Normal Adaptation at ITS Campus**



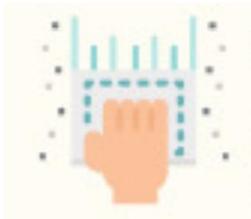
Make sure you are healthy, wear a mask and long sleeve clothes

your body temperature shall not > 37.50 C and / or are accompanied by cough / runny nose / shortness of breath / respiratory problems, using masks and long-sleeved clothing can prevent or minimize the spread of covid-19 to the body



Preparing Personal Work Tools, Cutlery, and Worship Equipment

As a step to mitigate the risk of disease and virus transmission, it is necessary to bring personal equipment such as work tools (laptop & stationery), cutlery (plates, spoons & tumblers), and worship tools (prayer mats & mukena).

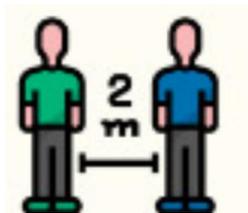


Cleaning, Especially in Areas that are Often Touched Before and After Activities

Before and after activities at the desk, door handles, elevator buttons, etc., you can perform the cleaning with a tissue and hand sanitizer.

Familiarize Yourself with Washing Your Hands 7 Steps Using Soap

How to wash your hands using soap with 7 steps is performed to maximize the avoidance of germs and diseases that are carried and stick to the hands



Keep Distance During Activities on campus Minimum 1.5-2 M

Perform physical distancing in the campus environment (office space, classrooms, elevators, laboratories, toilets, etc.) to ensure disease does not spread

Opening Windows / Ventilation / Doors While Turning On The Air Conditioner

Room ventilation is needed to reduce the spread of disease in a closed room so that air circulation is maintained



Schedule Room Sterilization and Air Conditioning / Other Air Conditioning Cleaning Periodically

This is performed to keep the room from becoming a nesting place for disease



- **Individual and Unit Logistics Needs**

- **Personal / Individual**

- ✓ Face mask
- ✓ Face shield (recommended)
- ✓ Drinking utensils (cutlery if needed)
- ✓ Handsanitizer.
- ✓ Soap (if needed).
- ✓ Prayer equipment.



- **Cleaning officers**

- **Personal**

- ✓ Face mask
- ✓ Gloves and face shield
- ✓ Drinking utensils and cutlery
- ✓ Hand Sanitizer / soap
- ✓ Prayer equipment



- **According to Main Duties and Functions (Tupoksi)**

- ✓ Plastic Bags (specifically for potential COVID-19 trash)
- ✓ Spare gloves
- ✓ Disinfectant Spray



- **Field Task Force Team (SKK & MC)**

- **Personal**

- ✓ Face mask
- ✓ Gloves and face shield
- ✓ Drinking utensils (cutlery if needed)
- ✓ Hand sanitizer
- ✓ Soap (if needed)
- ✓ Prayer equipment



- **According to Main Duties and Functions (Tupoksi)**

- ✓ Contactless Thermometer
- ✓ Plastic bags (specifically for potential COVID-19 trash)
- ✓ Spare gloves / thick gloves

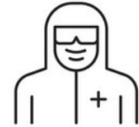




- **Emergency Response Team**

- **Personal**

- ✓ Face mask
 - ✓ Gloves and face shield
 - ✓ Drinking utensils (cutlery if needed)
 - ✓ Hand sanitizer
 - ✓ Prayer equipment



- **According to Main Duties and Functions (Tupoksi)**

- ✓ Hazmat
 - ✓ Boots
 - ✓ Plastic duct tape
 - ✓ Plastic bags (specifically for potential COVID-19 trash)
 - ✓ Spare gloves / thick gloves



- **Campus Unit**

- ✓ Thermal Gun at the building entrance and main gate of ITS
 - ✓ Hand sanitizer, especially at the entrance, a space that is an intensive use
 - ✓ Hand washing facilities and soap at the entrance to the building
 - ✓ Disinfectant for sterilization per unit once a week
 - ✓ Disinfection Chamber in certain locations that receive large numbers of guests
 - ✓ Covid-19 protocol guidelines
 - ✓ Logbook in and out of the laboratory
 - ✓ Classrooms, laboratories, offices have open windows and have good air circulation
 - ✓ A special application for daily condition reporting

CHAPTER-13



WORKING AT OFFICE SAFETY GUIDE



Office Occupational Health and Safety (K3) are all activities to guarantee and protect the safety and health of employees through efforts to prevent occupational accidents and work-related diseases in the office. Besides there are sources of physical, chemical and biological hazards, there are also sources of ergonomic hazards, which can cause potential occupational diseases such as back injuries, eye minus and others.

- **Occupational Health and Safety Requirements At Office**

(Regulation of Minister of Health 48 of 2016 concerning Office K3 Standards)

1. Placement of cabinets and office equipment should not obstruct the movement of people
2. Placing items in the cupboard by putting the heaviest items on the bottom
3. Employees carrying a high or heavy pile of goods must use a trolley and must not climb stairs but use a freight elevator if available
4. The ladder should not be an area for storing things, gathering, and any activities that can obstruct the passing
5. Spilled liquid must be cleaned immediately, strewn wires and loose pieces of objects and broken glass must be immediately repaired
6. Tripping hazards can be minimized by promptly replacing damaged tiles and worn carpets.



7. Office noise standards:

ROOM DESIGNATION	NOISE STANDARD (dBA)
Office (public / open)	55-65
Office (private)	50-55
Public and Canteen	65-75
Gathering and Meetings	65-70

8. Office lighting standards:

ROOM DESIGNATION	MINIMUM LIGHTING (LUX)
Work Room	300
Drawing Room	750
Receptionist	300
Archive Room	150
Meeting room	300
Dining room	250
Corridor / Lobby	100

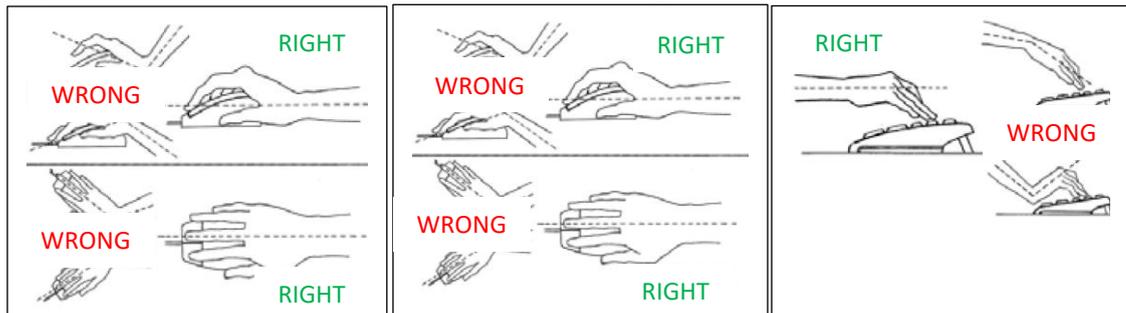
9. To be able to meet the requirements for health and comfort, the temperature of the office room ranges from 23 °C to 26 °C
10. Server computer rooms that require cool temperatures (usually around 18 ° C)
11. To get a level of comfort in an office room, moisture content is required with a humidity level of 40-60%, while for lobbies and corridors it is 30-70%.
12. To get a level of comfort in an office room, the maximum respirable dust content (PM₁₀) in the room air in an average measurement of 8 hours is as follows:

NO	TYPE OF DUST	MAXIMUM CONCENTRATION
1	Respirable Dust PM10	0,15 mg/m ³
2	Free Asbestos	0,1 serat/ml udara

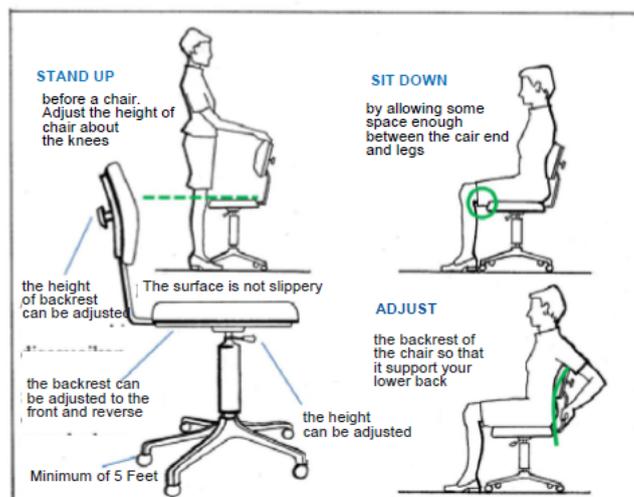
13. To get a level of work health in office room, the maximum CO concentration is 10 ppm
14. To get a level of work health in an office room, maximum Formaldehyde concentration is 0.1 ppm. The materials in office buildings can be a source of formaldehyde emissions such as paints, coatings, adhesives, cleaning agents, air fresheners, and furniture (for example from wood preservatives and other furniture).



15. To get a level of health and comfort in an office room the maximum bacterial content is $700 \text{ cfu} / \text{m}^3$, air free of pathogenic microorganisms. While Mushrooms / Molds: $1000 \text{ cfu} / \text{m}^3$
16. To get a level of health and comfort in an office room, the requirements for ventilation of air exchange for work room are $0.57 \text{ m}^3 / \text{org} / \text{min}$ while for meeting rooms it is $1.05 \text{ m}^3 / \text{min} / \text{person}$. Meanwhile, the required rate of air movement is in the range $0.15 - 0.50 \text{ m} / \text{sec}$. Work room that do not use refrigeration must have ventilation holes at least 15% of the floor area by applying a cross-ventilation system
17. Adjust the seat height to the height of the monitor so that the distance between the eyes and the monitor is 20 - 40 inches and the angle is 15 - 20 degrees below the horizontal
18. Adjust the height of the back and hand rests so that they are snug properly
19. Adjust the table with the keyboard and mouse aligned



20. Adjust the table with the keyboard and mouse in aligned position. Adjust the seat as in the illustration below :



CHAPTER-14



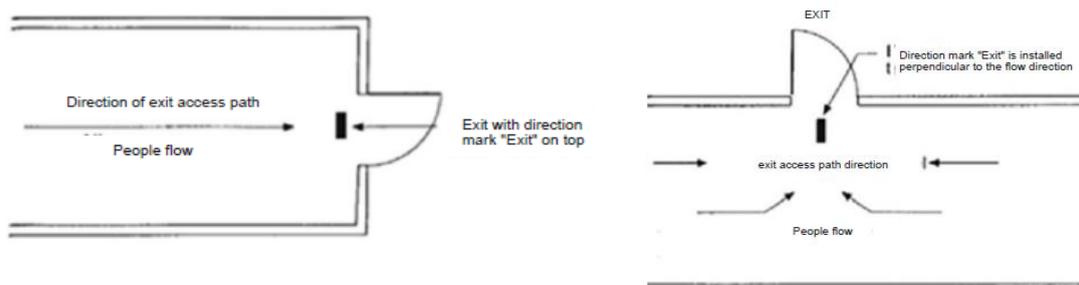
SAFETY SIGNS

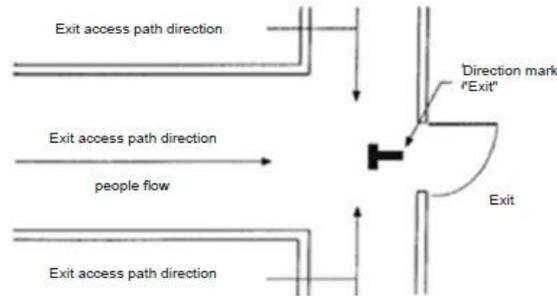


Occupational Safety and Health (K3) signs are useful tools in informing the hazards and to protect the health and safety of workers or visitors who are in the workplace. The choice of color on safety signs also demands attention from the possibility of potential hazards that can cause harm, for example, the potential for hazards can be described using yellow. When workers are aware of potential hazards in their surroundings, workers can then take early precautions so that accidents do not occur. Therefore the risk of possible accidents, injuries, disabilities or other damage can be minimized.

- **Signs of Evacuation or Safe and Relief Zones are Green (Regulation of Minister of Minister of Public Works No.26 of 2008 and ISO 7010 of 2019)**

1. These signs shall be clearly visible to all personnel or max. 30m and there are no objects that could potentially interfere with the function of the signs, here is an example of placement:





2. If an exit sign or an evacuation route sign near the floor is required, the sign must be illuminated, the distance from the floor min. 15 cm and max. 20cm. On emergency exits, the sign is posted on the door or near the door with a distance of 10 cm from the door frame.



normal lighting

3. The floor of the evacuation route must be marked with a line or other sign that clearly shows the evacuation route without interruption until it exits the building and remains visible even in the dark (material lights in the dark), for example:



lighting goes out

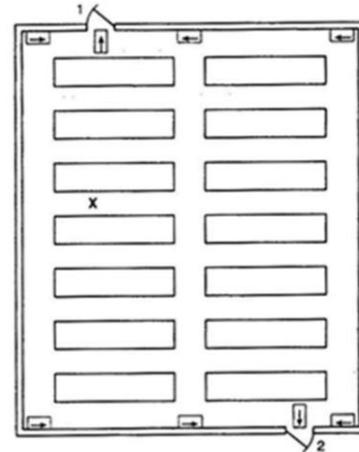
4. Placement of exit signs above the door vertically, a maximum of 20 cm from the door
5. The exit sign must be able to glow in the dark
6. The exit sign must clearly read "EXIT"
7. Exit signs can be equipped with the following symbol with a distance of min.



font Gloucester MT Extra
Condensed 470pt



8. Evacuation direction signs, shall be placed at eye level, in a place that can be seen from afar, with the appropriate number to make it easier to see signs from any point, not less and not excessive, for example:
9. Evacuation direction signs may use the following two symbols with sequential placement, which is placed at the end of the direction sign for the indicated direction (if pointing to the right, the arrow will be on the far right after the exit and the running man symbol, and vice versa)



10. Direction symbols must use the chevron arrow direction
11. The following is an example of an evacuation direction sign:



12. Any doors and lanes that are not evacuation routes must be arranged or placed in a position that does not lead to a misdirection of evacuation, and must be marked with a sign that says "NOT EXIT". The word "EXIT" under the word "NOT". Height of the word "NOT" min. 5 cm, 1 cm spacing and the height of the word "EXIT" min. 2.5 cm.
13. Evacuation signs on stairs or floors



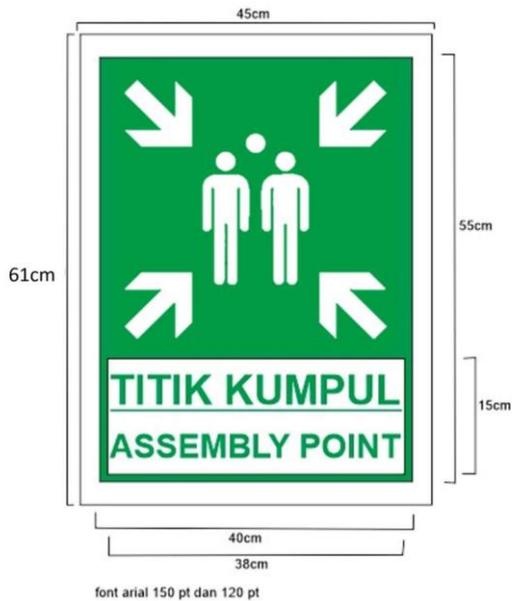
The white circle has 7.5 cm diameter and 2 mm thickness



14. Assembly point signs

15. Evacuation directions and other signs that support the evacuation process shall be able to glow up in the dark

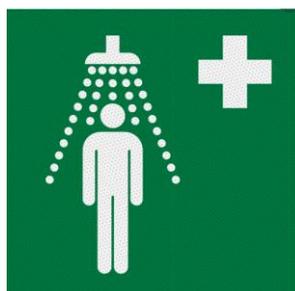
16. Symbol for First Aid



17. Symbol for an emergency eye wash location:



18. Symbol for the location of the safety shower



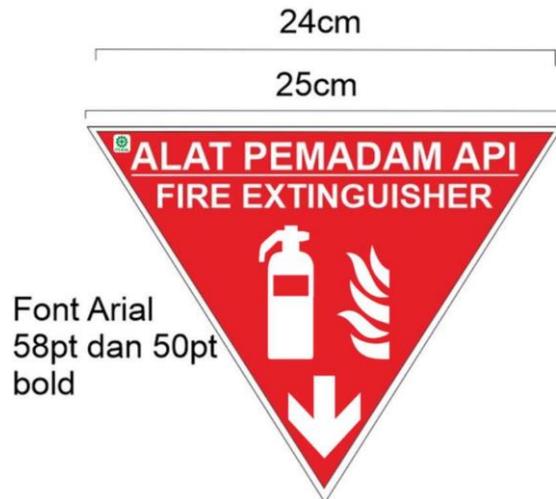
19. Symbol for the location of the stretcher:





- Fire Extinguisher and Prohibition Signs are Red

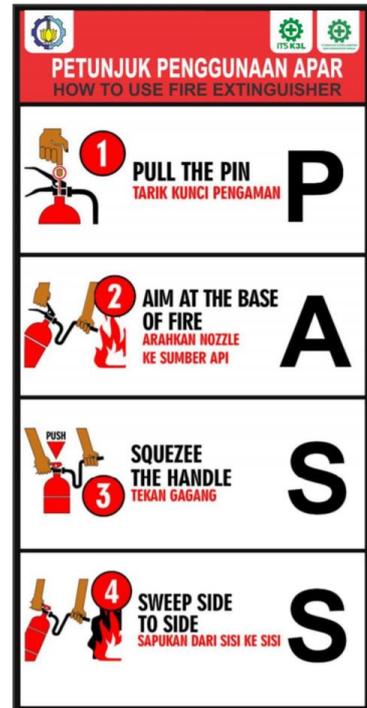
1. Signs for the location of the ITS K3L Fire Extinguisher tube placement along with the check list and its accessories:



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58pt dan 50pt
bold

No	APAR Location	APAR Type	APAR Weight	Pressure (Green/Red)	Tube Exterior Condition			Inspection Date	Sgd	Remark
					Tube	Handle	Hose			

If you want to see the full APAR status,
Scan BARCODE attached



2. ITS K3L Emergency Alarm Signs :





3. ITS K3L Hydrant Signs:



4. ITS K3L No Smoking Signs:



5. No Fires Symbol



6. No Passing Symbol



7. No climbing symbol



8. No touching symbol



9. No extinguishing the fire by water Symbol



10. No active cellphone symbol





- Potential Hazard Caution or Alert Signs are Yellow

1. Warning signs on the K3L ITS stairs



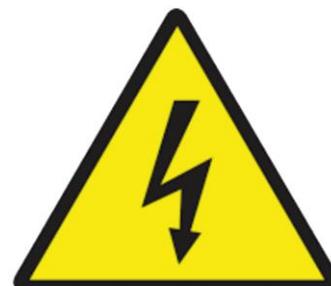
2. ITS K3L emergency call signs



3. Common warning symbol

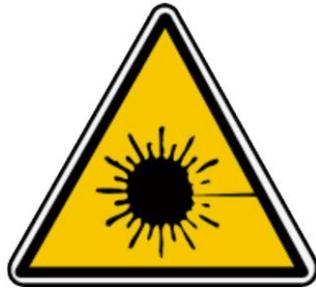


4. Electrical hazard warning symbol





5. Laser beam hazard warning symbol



6. Floor height inequality warning symbol



7. falling from a height warning symbol



8. Slip warning symbol



9. Construction equipment warning symbol





- **Obedied Obligation Signs are Blue**

7. Common obligation symbol



2. Reading manual obligation symbol



3. Wearing ear protection obligation symbol



4. Wearing safety glass obligation symbol



5. Symbol of obligation to wear eye protection from glare



6. Wearing safety shoes obligation Symbol





- **Obedied Obligation Signs are Blue**

7. Wearing safety gloves obligation
Symbol



8. Wearing coverall obligation
symbol



9. Wearing coverall obligation symbol

10. Using handrail obligation symbol



10. Wearing face shield obligation symbol

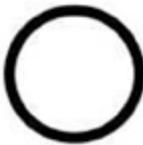
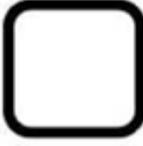
12. Wearing safety helmet obligation
symbol





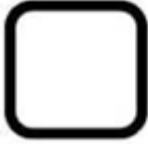
- Description of the type of Colors and Shapes of K3 signs

Safety Color	Contrast Color (Symbol or Writing)	Meaning
RED	WHITE	Prohibition Fire Extinguisher
YELLOW	BLACK	Warning/Alert Potential Hazard
GREEN	WHITE	Safe Zone First Aid
BLUE	WHITE	Obligatory
WHITE	BLACK	General Information

Safety Sign Geometry Shape	Purpose (Sign Group)	Description
1 	COMMAND SIGN	A circle indicating COMMAND to be obeyed
2 	ALERT SIGN	A triangle indicating ATTENTION or DANGER
3 	INFORMATION SIGN	A square delivering an INFORMATION



- Table of K3 Signs Color and Shape Description

Safety Sign Geometry Shape	Sub Group (Shape and Color)		Description
	1.1		PROHIBITION Command that should not be done
	1.2		OBLIGATIONS Command that should be performed
	2.0		ALERT Indicating a potential risk
	3.1		Provides information: SAFE ZONE / FIRST AID / SAFETY EQUIPMENT
	3.2		FIRE EXTINGUISHER Providing information on fire extinguishing tools
	3.3		GENERAL INFORMATION Providing information for public



CLOSING

SAFETY FIRST

Occupational and environmental health & safety measures need to be performed in an integrated and sustainable way and supported by full commitment and awareness by all parties in order to realize a safe, secure and comfortable work situation..

We hope that this guidebook will be useful for all ITS lecturers, students, and staffs in their daily activities in the campus environment.



REFERENCES

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2008 concerning Technical Requirements for Fire Protection Systems in Buildings
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Law of the Republic of Indonesia Number 22 of 2009 concerning Road Traffic and
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ISO 7010 concerning Standard Safety Sign