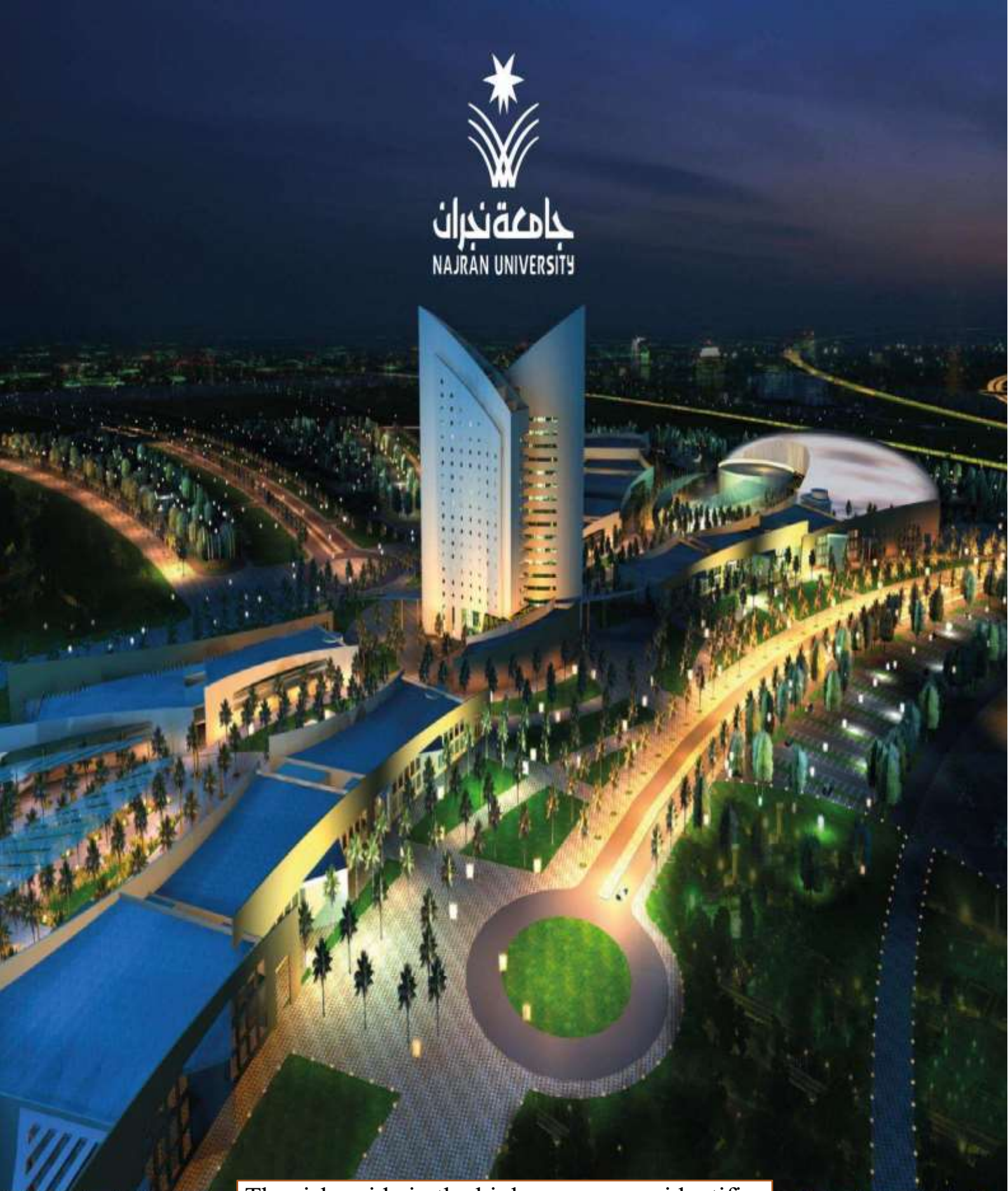
جامعة نجران
NAJRAN UNIVERSITY



The risk guide in the biology program identifies all potential risks and how to deal with them and is consistent with the risk guide issued by the university's Safety and Risk Department

For the Academic Year 1444\1445 AH

Introduction:

Risk guidance in a biology program plays an important role in identifying and addressing potential risks. It must be consistent with the risk manual issued by the University Safety and Risk Department. This helps in providing a safe environment for biology workers and students.

Risks:

In the context of risk management, “risk” refers to the possibility that an event or situation will have adverse effects on program objectives. It includes uncertainty surrounding future events and involves the possibility of negative outcomes.

Risk in this context is often expressed in terms of the probability of an event occurring and the potential consequences or impact if it occurs. The risk management process involves analyzing these factors to make informed decisions about how to address, respond to or mitigate risks as an integral part of organizational planning and decision-making to ensure flexibility and adaptability in the face of uncertainties.

Risk Management:

Risk management is defined, according to the Project Management Institute, as the correct handling of any uncertain event or circumstance, and if it occurs, it may have a negative impact on the project objectives, as these events include unexpected circumstances, situations, and threats, the occurrence of which may affect the project’s progress in the right way. required.

If you return again to the previous definition, you will find that we mentioned that risks are not limited to a negative impact on the project objectives only, but sometimes a positive impact occurs, which some people miss, as most people associate the word “risk” with negative results only, contrary to reality. Risks are not only negative risks.

The origins of risk management

The principle of risk management has been applied since ancient times, specifically in the era of ancient Chinese civilization, where merchants would avoid the risks of having their goods stolen or damaged if ships were exposed to danger. These risks prompted them to distribute their goods to multiple ships and not to one ship.

In the twentieth century, risk management became the focus of attention of scientists, and risk management was not recognized as an official science until the fifties of the last century, when interest in studying it became widespread after World War II, when it was closely linked to the field of insurance, and at that time the science of risk management spread in books. And newspaper articles.

Risk management has evolved with the development of modern technology and the application of the latest technologies, and its use has expanded in various fields, institutions and projects.

The specialty of risk management

The risk management major stands out as a study as it is a training course that aims to teach students all the basics and knowledge related to risk management, along with skills that help them how to make appropriate decisions when studying risks. The risk management major also directs students to the correct steps for risk management, and studies the various types of risks according to the field, such as financial, technological, legal, and operational risks. Students are also trained to apply their strategies and make appropriate decisions.

The importance of risk management

-It helps to identify and study potential risks, which contributes to enhancing performance development within the program.

-It prompts the program to deal with risks with the best response to reduce risks.

-Ensures that the work team proceeds correctly to achieve the program objectives by

focusing on periodic follow-up of risk management.

-It provides a comprehensive and in-depth overview that plays a role in revealing potential risks that are not clearly apparent to those in charge of the program.

-It helps those in charge of the program to make the most appropriate and best decisions in the interest of the entity.

-The program provides the highest level of quality data on risks.

-Reducing the surprises that may occur if potential risks are studied early.

Steps and stages of risk management

Risk management depends mainly on five basic steps and stages.

1-Identify risks

The risk identification process is carried out by the work team responsible for risk management, through brainstorming or analysis. In this step, all potential risks are identified and recorded in the risk management system for easy access, and the negative effects of risks on the program are determined.

2- Risk analysis

In this step, potential threats to the program are analyzed to measure their severity, in addition to revealing the link between them and the causes that lead to their occurrence and related to the program. This process is carried out manually, and as a result, the policies and procedures that define the risk management framework are determined.

3-Risk assessment

The next step is risk assessment, which is divided into a qualitative and quantitative assessment:

Qualitative assessment: It is used to evaluate risks that cannot be measured in numbers, such as the risks of weather changes, and the assessment must be impartial.

Quantitative assessment: The program relies on measuring quantifiable threats in numbers,

and it is the basic assessment used in physical aspects.

At this stage, the most and least severe risks are determined in order to prioritize the threats that require their management first and urgently and the intervention of senior management. Ranking of risks is required at that stage so that management can obtain a complete view of all potential threats with their various degrees of severity.

4- Risk management

The step of dealing with risks comes through taking the required measures to avoid their occurrence or reduce the severity of their damage, by holding discussions with departments, experts, and clients to stand on solid ground of proposed and appropriate solutions.

This process occurs under the supervision of senior management at the college and university.

5- Monitor risks

There are some types of risks that cannot be eliminated, and therefore in that case the work team must monitor them continuously to detect changes that may occur, using the risk management system. The most prominent examples of risks that require practical action are environmental risks.

Types of risk management

Risk management is mainly divided into four types, which express the way to deal with risks using a different strategy. These types include the following:

1- Avoid risks

This type of risk management strategy relies on avoiding decisions that would increase the likelihood of the risk occurring, thus reducing the occurrence of potential threats largely.

2- Reducing risks

The risk mitigation strategy is applied in order to mitigate its negative effects on the project or on the institution, through undertaking a number of procedures.

3- Transferring risks

Relying on a risk transfer strategy means signing a contract that stipulates that the program or individuals are not responsible for bearing the potential risks, but that they are borne by another party. This strategy reduces the severity of the risks and the burden placed on the program in bearing them.

For example, this strategy is applied when contracting with an insurance company, which bears damages arising from risks that the insured may be exposed to, such as accidents.

4- Accept risks

Sometimes you follow a risk-accepting strategy, in which you take no actions that reduce the damage of downside risks, but what causes the program to follow such a strategy and surrender to risks rather than confront them?

The answer is that the cost of reducing risks exceeds the value of the risks, and therefore decision-makers believe that reducing risks in that case is a risk in itself, and it is better to accept it in that case to prevent incurring exorbitant financial costs.

But accepting risk is not proportional to risks that have severe harmful effects on the program, so risks must be dealt with with this strategy if their negative effects are mild.

Risk management characteristics

A number of the following characteristics characterizes risk management:

1- Make the best decision

Risk management includes many solutions and alternatives that help make the best and most appropriate decision, which is the decision that guarantees the occurrence of damages and losses at the lowest possible rates. Risk management always depends on analyzes in decision-making.

2- Preparing for the worst risks

Risk management is characterized by its contribution to confronting various risks with degrees of severity. If the worst risks are expected to occur, risk management represents the basic reference in identifying how to confront these damages and prepare for them well.

3- Reduces the harmful effects of risks

Risk management focuses on reducing the negative effects of potential risks to the lowest possible extent, in the event that these risks cannot be completely eliminated.

4- Planning

Risk management is characterized by planning in its work, as it develops a plan that includes all stages of treating or eliminating potential risks, in addition to planning the roles that each individual working in this department will assume.

5- Anticipate risks

The primary function of risk management is to anticipate the risks that are likely to occur to the organization soon, so it always anticipates their occurrence and cannot be relied upon to deal with damages after they occur.

Potential biological hazards

Potential danger

Spillage and leakage of a biological material on the ground or body

Description of the risk

Unintended and unplanned leakage of some hazardous biological materials, whether liquid, solid or gaseous, during transportation, storage, handling or disposal, causing the packaging to break, which poses a threat to the health of the individual and the environment.

Risk prevention policy

- Look at the safety card for the materials handled in the laboratory and read it carefully.
- Learn the properties of the materials you use, keep the place clean and get rid of clutter in the laboratory.
- Study the procedures established for the safe use of biological materials.
- Take possible measures to prevent a biological spill, and plan how to deal with it.
- Learn the best ways to clean and sterilize any biological material you deal with in the event of a spill
- Posting the name of the substance and its warning and danger signs on the secondary container into which the substance is transported.

Actions taken by the program to address the risk

- If the spill is minor (a small amount), the laboratory technician can deal with the incident through the following procedures, but if the spill is major (large), it is necessary to seek the help of the responsible department.
- Notify others close to the accident that a biological spill has occurred and remove them from the site.
- Isolate the affected area with tape or barriers.
- Rescue the injured and move them to a safe place.
- Providing ventilation in the contaminated area.
- Dealing with the contaminated spot according to its biological nature.
- Determine the treatment steps (depending on the nature of the spilled material).

End the danger and get rid of the damage it caused

- Clean the contaminated area and sterilize it according to the safety card instructions.
- Collect the spilled material in a special container.
- Dispose of biological waste through correct methods.

- Announcing the end of the danger and the return of things to normal.
- Write a report describing what happened in detail.

Potential danger

Fire resulting from the ignition of biological and chemical materials

Description of the risk

Unintended and unplanned spillage of some hazardous biological materials, whether liquid, solid or gaseous, during transportation, storage, handling or disposal, or breakage of the container, which poses a threat to the health of the individual and the environment.

Risk prevention policy

- Know the specifications of the flammable material (through the biological safety card)
- Store flammable materials in special places.
- Do not leave dust of flammable solids on the ground.
- Take possible measures to prevent a biological spill, and plan how to deal with it.
- Prior training on how to deal with these dangerous materials.
- Replace more dangerous solvents with less dangerous ones.

Actions taken by the entity to address the risk

- Know the emergency exits.
- Turn on the alarm and use the fire extinguisher.
- Report injuries and help treat the injured.
- Direct firefighters to the location of the fire.

End the danger and get rid of the damage it caused

- Clean the contaminated area and sterilize it according to the safety card instructions.
- Announcing the end of the danger and the return of things to normal.
- Write a report describing what happened in detail.

Potential danger

Danger of explosion of explosive biological and chemical materials

Description of the risk

Unintended and unplanned leakage of some hazardous biological materials, whether liquid, solid or gaseous, during transportation, storage, handling or disposal, causing the packaging to break, which poses a threat to the health of the individual and the environment.

Risk prevention policy

- Learn about the specifications of biological or chemical explosive materials (through the biological safety card)
- Handle these materials with extreme caution.
- Taking into account the compatibility and incompatibility of the mixture materials.
- The necessity of having emergency and evacuation plans.
- Prior training on how to deal with these dangerous materials.
- Replace more dangerous solvents with less dangerous ones.
- Wear personal protective equipment (glasses, mask, gloves).

Actions taken by the entity to address the risk

- Notify others, turn off the electricity and doors, and leave the place immediately.
- Know the emergency exits.
- The necessity of implementing emergency and evacuation plans.
- Report injuries and help treat the injured.
- Direct firefighters to the location of the fire.
- Contact the Civil Defense Forces.

End the danger and get rid of the damage it caused

- Clean the contaminated area and sterilize it according to the safety card instructions.
- Announcing the end of the danger and the return of things to normal.
- Write a report describing what happened in detail.

Potential danger

The danger of throwing biological waste in municipal containers and sewage basins

Description of the risk

- The possibility of widespread pollution that will extend to the surrounding environment.
- Harmful to air quality and the surrounding environment.

Risk prevention policy

- Noting the dangers of dumping biological waste in municipal containers and sewage basins
- Learn about the specifications of biological or chemical explosive materials (through the biological safety card)
- Handle these materials with extreme caution.
- Taking into account the compatibility and incompatibility of the mixture materials.
- The necessity of having emergency and evacuation plans.
- Prior training on how to deal with these dangerous materials.
- Replace more dangerous solvents with less dangerous ones.
- Wear personal protective equipment (glasses, mask, gloves).

Actions taken by the entity to address the risk

- Reporting the presence of biological waste in municipal containers and sewage basins.
- Not touching, tasting or smelling.
- Waste collection and separation by a specialist.
- Isolate the dangerous substance - if possible, and neutralize it.
- Transporting waste after separating it to private warehouses.

End the danger and get rid of the damage it causes

- Clean the contaminated area and sterilize it according to the safety card instructions.
- Announcing the end of the danger and the return of things to normal.
- Write a report describing what happened in detail.

Potential danger

Fall, leakage and explosion of a compressed gas cylinder

Description of the risk

Compressed gas represents a danger regardless of its nature. A cylinder falling or a gas leak represents a constant danger to those dealing with it.

Risk prevention policy

- Store upright in well-ventilated places and away from other hazardous materials.
- Install the cylinder and tie it with a chain or safety belt and secure it well.
- There are good regulators tested to measure pressure.
- Ensure that the cylinder is 4 meters away from flammable or incompatible materials.
- Use private transport vehicles
- Prior training on how to deal with transporting cylinders
- Identify the nature of the gas present and review chemical safety cards before use.

Actions taken by the entity to address the risk

- Follow a policy of preventing danger and dealing with it through civil defense.
- Notifying others of the presence of a gas leak.
- Isolate the dangerous area - if possible - with adhesive tape and barriers.
- Providing good ventilation of the contaminated area.

End the danger and get rid of the damage it causes

- Clean the contaminated area and sterilize it according to the safety card instructions.
- Announcing the end of the danger and the return of things to normal.

- Write a report describing what happened in detail.

Potential danger

The risk of mixing chemical or biological materials during transportation, handling, storage and disposal

Description of the risk

Sometimes it happens that the presence of some materials next to each other leads to mixing, which leads to a chemical reaction and the release of harmful and flammable gases.

Risk prevention policy

- List all hazardous chemical and biological materials.
- Providing a safety card for everyone in laboratories and placing it in a place accessible to everyone.
- Be very careful not to allow incompatible materials to be present next to each other.
- In the event that there are traces of chemical or biological materials, care must be taken by specialists to store them well.
- Use special vehicles for transportation.
- Prior training on how to handle these materials.

Actions taken by the entity to address the risk

- Keep those close to the danger away from the site
- Follow a policy of preventing danger and dealing with it through civil defense.
- Rescuing the injured and transporting them to a safe place
- Isolate the dangerous area - if possible - with adhesive tape and barriers.
- Providing good ventilation of the contaminated area.

End the danger and get rid of the damage it caused

- Clean the contaminated area and sterilize it according to the safety card instructions.
- Announcing the end of the danger and the return of things to normal.

- Write a report describing what happened in detail.

Potential danger

The occurrence of contamination resulting from the presence of viruses, bacteria, fungi or parasites on the site. Contact with biological media containing the microorganism or contact with the sample containing it.

Description of the risk

Unintentional pollution that occurs as a result of working without taking the necessary precautions or indirectly coming into contact with a hazardous substance with the human body. Inhaling a large amount of dangerous pollutant containing some microbes. Direct contact with some vital media containing some microbes without taking the necessary precautions

Risk prevention policy

- Providing materials that kill viruses and bacteria to sterilize surfaces
- Wear protective clothing and gloves and take the necessary precautions when working with samples that may contain dangerous microbes.
- Conduct all work related to dangerous microbes in safe places that have safety procedures.
- In the case of a student or any other person who is not well trained, the work must be supervised by someone who is specialized and experienced in the field
- Sterilize the place upon completion of work

Actions taken by the entity dealing with the risk

If the pollution is on a small scale and can be contained, it must be dealt with immediately and the pollution removed as quickly as possible. If it is on a larger scale and cannot be controlled, in this case the following must be done:

- Alert people near the site about the occurrence of pollution and they must be careful
- Evacuate the site immediately until the danger is dealt with.

- Wash surfaces that have been contaminated with antivirals and other microbes that are expected to be present in the samples.
- Provide adequate ventilation inside the unit prepared for work
- If the danger causes a direct impact, someone must be called to provide first aid or the affected person must be transported to the nearest hospital

End the danger and get rid of the damage it caused

- Sterilize the place with appropriate sterilizers and remove the source of danger
- Announcing the end of the danger
- Writing a report on the incident and its circumstances.

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