Session6

Class 1 on Hazard Analysis & Mitigation

Experiment Title: Hazard Analysis and Mitigation

Objective:

The objective of this experiment is to demonstrate the process of hazard analysis and mitigation in a controlled laboratory setting. The experiment will involve identifying potential hazards, assessing their risks, and implementing appropriate mitigation measures.

Materials:

Laboratory setup with various equipment and substances

Personal protective equipment (PPE) - gloves, safety goggles, lab coat, etc.

Hazard assessment checklist or form

Hazard mitigation tools and equipment - fire extinguisher, spill containment materials, etc.

Experimental procedures and protocols

Procedure:

Hazard Identification:

a. Survey the laboratory environment and identify potential hazards, such as chemical substances, equipment, electrical sources, and physical hazards.

b. Make a list of identified hazards, categorize them based on their nature (e.g., chemical, electrical, physical), and assign a severity rating to each hazard.

Risk Assessment:

a. Evaluate the risks associated with each identified hazard by considering factors such as the likelihood of occurrence, potential consequences, and exposure to personnel.

b. Use a risk matrix or similar tool to determine the level of risk for each hazard, based on the severity rating and likelihood of occurrence.

Hazard Mitigation:

a. Based on the risk assessment, prioritize the hazards that pose the highest risk to personnel and the laboratory environment.

b. Develop and implement appropriate mitigation measures for each identified hazard, considering engineering controls, administrative controls, and personal protective equipment.

c. Document the mitigation measures for each hazard, including specific actions to be taken and responsible personnel.

Experiment Execution:

a. Perform experimental procedures while following the identified hazard mitigation measures and safety protocols.

b. Ensure all personnel involved in the experiment are wearing appropriate PPE.

c. Monitor the experiment for any unexpected hazards or deviations from the planned mitigation measures.

Hazard Response:

a. In the event of an unforeseen hazard or incident, follow the established emergency response procedures.

b. Use the appropriate hazard mitigation tools and equipment, such as fire extinguishers or spill containment materials, to control and mitigate the hazard.

c. Ensure that affected personnel receive prompt medical attention if needed.

Post-Experiment Evaluation:

a. Review the effectiveness of the implemented hazard mitigation measures.

b. Identify any areas for improvement in the hazard analysis and mitigation process.

c. Make necessary adjustments to the hazard assessment checklist or form based on the findings.

Note: This experiment should be conducted under the supervision of a qualified instructor or safety professional. Adhere to all safety protocols and regulations applicable to the laboratory environment.