

# Safety and Incident Management Plan for Project Lab

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## Introduction

The Project Lab at Ahsanullah University of Science & Technology (AUST) plays a crucial role in the Mechanical and Production Engineering (MPE) department by supporting students in their senior capstone projects and product design work. This lab allows students in both Industrial and Production Engineering (IPE) and Mechanical Engineering (ME) programs to develop and test prototypes, conduct experiments, and design functional products. The final products or projects are often retained by students for future research or reference. This document provides a comprehensive safety and incident management plan to meet accreditation requirements and ensure a safe learning and working environment.

## Safety Rules and Practices

To maintain a safe environment in the lab, the following safety rules and procedures are enforced:

- **Personal Protective Equipment (PPE):** All lab users must wear appropriate PPE, including lab coats, safety goggles, gloves, and closed-toe shoes, depending on the equipment being used.
- **Restricted Access:** Access to the lab is restricted to authorized personnel only. Students must be supervised by the Lab In-Charge or Lab Assistant during experiments and project work.
- **Safe Handling of Tools and Equipment:** Users must handle all tools and equipment according to the manufacturer's guidelines and lab protocols to prevent accidents. Malfunctioning equipment should be reported immediately.
- **Material Safety:** Appropriate handling of materials, including metals, chemicals, and adhesives, is required. Safety Data Sheets (SDS) for any hazardous materials are available in the lab.
- **Fire Safety and Emergency Exits:** Fire extinguishers are accessible, and emergency exits are kept unobstructed. Fire evacuation procedures are reviewed with students at the beginning of each semester.
- **Ergonomics Awareness:** Students are advised on proper ergonomics while using workbenches, power tools, and assembly stations to prevent strain-related injuries.

# Incident and Accident Prevention Procedures

To minimize the risk of incidents, the following preventive measures are implemented:

- **Routine Inspections:** The Lab In-Charge conducts routine inspections to ensure that all tools, equipment, and workstations are in safe working condition.
- **Equipment Maintenance:** Power tools, machines, and other equipment undergo regular maintenance checks to ensure they function safely and efficiently.
- **Safety Training:** All students receive safety training, including correct PPE usage, emergency procedures, and safe handling of tools and equipment, before engaging in lab work.
- **Emergency Drills:** Periodic emergency drills familiarize students and staff with evacuation routes and procedures in the event of fire or other emergencies.

## Provisions for Managing Accidents and Health Hazard Conditions

In the event of an accident or health hazard, the following provisions are in place to ensure quick and effective response:

- **Emergency Contacts:** Emergency contact information for the Lab In-Charge, Warden, Assistant Warden, and medical services is posted prominently in the lab.
- **First Aid Kit:** A fully stocked first aid kit is available in the lab to treat minor injuries, such as cuts or burns.
- **Fire Extinguishers:** Fire extinguishers are strategically located for use during emergencies.
- **Emergency Response Protocol:** In case of an emergency, the Lab In-Charge should be notified immediately. If necessary, the Lab In-Charge will contact the Warden and Assistant Warden to coordinate with the AUST Fire/Disaster Safety Team.
- **Evacuation Procedure:** For severe incidents, such as fire or hazardous material spills, students and staff should follow designated evacuation routes to the assembly point outside the building.

## Roles and Responsibilities

### Lab In-Charge

The Lab In-Charge is responsible for the overall safety and incident management in the lab. Key responsibilities include:

- Conducting regular safety checks and maintenance inspections of all lab equipment.

- Providing initial safety training to students and lab personnel before projects and experiments begin.
- Responding to incidents and coordinating with the Warden and Assistant Warden during emergencies.
- Reporting safety concerns to the Department Head and ensuring corrective actions are taken.

## Lab Assistant/Attendant

Under the supervision of the Lab In-Charge, the Lab Assistant is responsible for:

- Assisting with the setup and maintenance of lab tools and equipment.
- Monitoring students during lab sessions to ensure adherence to safety protocols.
- Reporting any equipment issues or safety concerns to the Lab In-Charge.

## Warden and Assistant Warden

As part of the AUST Fire/Disaster Safety Team, the Warden and Assistant Warden are responsible for:

- Assisting with evacuation procedures during emergencies.
- Coordinating with external emergency services if required.
- Reporting incidents to the Campus Safety Task Force for further action.

## Lab-Specific Incident Prevention Plan

The following guidelines apply to the Project Lab to ensure safe conduct of activities:

1. **Project Prototyping and Assembly:** Students must handle materials, tools, and equipment with care, especially when working with sharp tools or high-temperature equipment. Gloves and safety goggles are required.
2. **Use of Power Tools and Machines:** Only trained students should operate power tools. Tools should be inspected before each use, and all connections and attachments should be secure.
3. **Handling Hazardous Materials:** Any use of hazardous materials, such as adhesives or chemicals, should be conducted in a well-ventilated area. Proper PPE and storage guidelines must be followed.
4. **Product Testing and Analysis:** During testing of prototypes, students should maintain a safe distance from moving parts and wear appropriate protective gear to avoid injuries.

## **Conclusion**

The Project Lab is committed to providing a safe environment for students, faculty, and staff engaged in project-based learning. Through established safety protocols, incident prevention measures, and emergency response plans, the lab minimizes risks and ensures effective incident management. Regular reviews and updates to this safety plan are conducted to comply with accreditation standards and evolving safety practices.