

# Project Safety Plan

*This form must be completed for experiments/tests performed outside of controlled environments such as laboratories and shops. Please complete this form and forward it to EHS for review and approval.*

Date:

Plan Completed By:

Team Members and Contact Information:

Faculty Member/Supervisor (if applicable):

Background:

Proposed Test Description(s):

Proposed Project Schedule:

## Hazard Assessment

*Using the attached table for Example Hazards and Mitigation/Safety Measures as a reference, identify the hazards associated with the proposed project along with controls that will be used to mitigate them.*

Hazard	Mitigation/Safety Measure(s)

*Provide an attachment if more space is needed for hazards and mitigation/safety measures.*

## **Preparation and Testing Protocol**

Upon obtaining appropriate approvals to perform testing and using a designated test site, the following procedure will be followed to ensure the safety measures referenced in the Risk Assessment are in place.

- Verify all required approvals are obtained.
  - Risk Management
  - Security
  - EHS
- Communicate to the EHS scheduled test dates and times to allow the option for oversight.
- When required, ensure appropriate supervision is available and onsite during testing procedures.
- When applicable, ensure nearby building occupants are informed of the event.
- Ensure all team members are aware of their roles and responsibilities (including emergency response procedures).
- Ensure the test area is cordoned off, free of personnel, and is clear of obstructions.
- Inspect all testing equipment and safety devices for defects and functionality.
- Ensure all mitigation/safety measures referenced in the Risk Assessment are in place and functioning.
- Ensure all participants know and understand this assessment and its requirements.
- When applicable, conduct a final check to ensure all personnel are clear of the defined test area.

## **Attachments**

- Additional Hazards and Mitigation/Safety Measures
- Illustrations and other supporting documents

# Project Safety Plan

## Example Hazards and Mitigation/Safety Measures

Hazard	What to Look For	Mitigation/Safety Measures			
		<i>Substitution</i>	<i>Engineering</i>	<i>Administrative</i>	<i>PPE</i>
<b>Physical:</b> <ul style="list-style-type: none"> <li>• Impact or vibration</li> <li>• Striking</li> <li>• Crushing or pinching</li> <li>• Shearing or punching</li> <li>• Exposure to energized equipment</li> <li>• Noise</li> <li>• Manual material handling and ergonomics</li> <li>• Working at heights and fall hazards</li> <li>• Slip and trip hazards</li> <li>• Hot work (fire, burns, welding hazards)</li> <li>• Compressed air or gas hazards</li> <li>• Light and laser exposure</li> <li>• Radiation exposure</li> </ul>	<ul style="list-style-type: none"> <li>• Sources of motion that could result in being hit by objects such as falling objects</li> <li>• Moving machinery and components such as grinders, drilling machines, engines, motors, pumps, etc.</li> <li>• Sources of sharp objects, moving machinery, or points that could pierce, catch, or pinch the body</li> <li>• Electrical hazards such as exposed wiring or switches, exposed receptacles, power boxes, damaged tool wiring, improper grounding, etc.</li> <li>• Work requiring energized electrical components</li> <li>• Pressurized equipment (i.e., boilers, pots, tanks, piping, hosing, etc.)</li> <li>• Material handling equipment components (i.e., hoists, lifts, pneumatics, etc.)</li> <li>• Inadequate clearance</li> <li>• Elevated work areas over four feet</li> <li>• Sources of high or low temperature that could result in burns, heat stress, hypothermia or frostbit</li> <li>• Sources of electromagnetic radiation such as UV welding emissions, germicidal lamps, lasers, microwaves, and magnets</li> <li>• Ionizing sources such as X-rays</li> <li>• Sources of sudden release (either physical or electrically) that could harm</li> <li>• Uneven surfaces, slippery surfaces and outside ground conditions</li> <li>• Look for water depth and potential for falling into water</li> </ul>	<ul style="list-style-type: none"> <li>• Use different tools</li> <li>• Mechanize process</li> </ul>	<ul style="list-style-type: none"> <li>• Change the way the work is done</li> <li>• Use lifting aid and positioning devices</li> <li>• Keep things clean and uncluttered</li> <li>• Exhaust ventilation</li> <li>• Protection methods such as isolation, emergency stops, double hand starts, guarding, and cages</li> <li>• Shielding materials</li> </ul>	<ul style="list-style-type: none"> <li>• Lock-Out/Tag-Out</li> <li>• Create standard operating procedures</li> <li>• Hearing Conservation</li> <li>• Hot Work Permit</li> <li>• Fall Protection</li> <li>• Radiation badges</li> <li>• Electrical Safety Program</li> <li>• Do not wear loose clothing and tie hair back</li> <li>• Monitoring</li> <li>• Proper body position</li> <li>• Attend safety training</li> <li>• Follow safe work practices</li> </ul>	<ul style="list-style-type: none"> <li>• Safety glasses</li> <li>• Tinted goggles</li> <li>• Insulated gloves</li> <li>• Hearing protection</li> <li>• Fall protection</li> <li>• Safety boots</li> <li>• Hard hat</li> <li>• Leather gauntlets</li> <li>• Welding helmets</li> <li>• Cut-resistant gloves</li> <li>• Cut-resistant sleeves</li> </ul>
<b>Chemical:</b> <ul style="list-style-type: none"> <li>• Liquids, solids, gases, dusts, vapors, and mists comprised of organic or inorganic compounds</li> <li>• Building materials such as asbestos or lead</li> <li>• Toxic materials</li> <li>• Controlled substances</li> <li>• Cleaning agents</li> <li>• Chemotherapy drugs</li> <li>• Cryogenic liquids</li> </ul>	<ul style="list-style-type: none"> <li>• Chemical emissions such as smoke, gas, dusts, vapors that are not controlled</li> <li>• Sudden unforeseen spills or releases</li> <li>• Welding smoke</li> <li>• Pass spill history</li> <li>• Damaged building materials</li> <li>• High potential of splashing</li> <li>• Working with highly toxic or hazardous chemicals versus highly toxic chemicals</li> <li>• Working with large amounts of chemicals</li> <li>• Hazardous storage or materials including wastes</li> </ul>	<ul style="list-style-type: none"> <li>• Change process so chemical is not used</li> <li>• Substitute a less hazardous chemical in process</li> </ul>	<ul style="list-style-type: none"> <li>• Local ventilation (i.e., fume hood)</li> </ul>	<ul style="list-style-type: none"> <li>• Respirator Protection</li> <li>• Personal Monitoring</li> <li>• Attend safety training</li> <li>• Safety showers/eye-wash stations</li> </ul>	<ul style="list-style-type: none"> <li>• Safety glasses</li> <li>• Chemical resistant clothing/aprons</li> <li>• Chemical resistant sleeves, gloves, and respirators</li> <li>• Lab coats</li> </ul>
<b>Biological:</b> <ul style="list-style-type: none"> <li>• Blood-borne pathogens</li> </ul>	<ul style="list-style-type: none"> <li>• Working with infectious agents</li> <li>• DNA/RNA work</li> </ul>	<ul style="list-style-type: none"> <li>• Change process so agent or pathogen does not have to be used</li> </ul>	<ul style="list-style-type: none"> <li>• Biological safety cabinets</li> <li>• Contamination procedures</li> <li>• Proper design of work area</li> </ul>	<ul style="list-style-type: none"> <li>• Center of Disease protocols</li> <li>• Proper work practices</li> <li>• Attend safety training</li> <li>• Safety showers/eye-wash stations</li> </ul>	<ul style="list-style-type: none"> <li>• Safety glasses</li> <li>• Mask</li> <li>• Gloves</li> <li>• Proper clean-up and disposal supplies</li> </ul>