iSTAR Laboratory
Safety Orientation & Policies

Orientation to Lab Facilities

Any persons who will be working in the iSTAR Laboratory space must have an orientation to the lab and shop areas guided by PSU faculty or staff who will identify and explain the equipment, policies and procedures described in this document.

Emergency Procedures

Call 911 or Campus Public Safety Office (CPSO) at 503-725-4404 in the event of an emergency.

In the event of an emergency that requires evacuation of the lab such as a significant fire, pull the nearest fire alarm pull station:

- next to concrete lab exit doors
- upper level on north side of loading dock rollup door
- outside of iSTAR lab next to building elevators in west hallway

Then exit the building in the safest manner:

- out the iSTAR doors on the north side of the lab, into the SRTC hallway, and up the stairs on the east side of the building; or
- out the loading dock entrance in the southwest corner, upper level, of the lab.

After evacuating, Call 911 or CPSO at 5-4404. Stay in a safe location near the building so you are able to provide first responders with information about the incident.

If you need assistance cleaning up a small spill of oil or other chemical, contact Environmental Health and Safety (EHS) at 5-4312 or in SRTC 144. Contact CPSO (5-4404) if you need assistance with a spill after hours, or for any major, uncontrolled or ongoing spill.

Safety Equipment

The iSTAR lab maintains a variety of equipment designed for your safety. Familiarize yourself with the location and appropriate use of the following equipment:

Equipment	Use	Location
Snorkles	Control welding fumes and dust	1 fixed in machine shop 1 portable unit 1 location on upper level where snorkel can be attached
Portable air filters	Dust control – general	Locations vary
Fire extinguishers	Extinguish small fires (no larger than a wastebasket)	1 in machine shop area 1 near main entrance to lab 1 on south side of loading dock door
Fire alarm pull stations	Evacuate building in an emergency	1 next to concrete lab exit doors 1 on north side of loading dock door 1 - outside lab next to elevators
First aid kits	First aid for minor injuries	Kitchen area near machine shop
Safety harness	Working at heights; must be trained prior to equipment use	Lifting rack area
Hard hats and safety glasses	Protection from overhead hazards and hazards to eyes	Near main entrance
Eyewash station	Emergency flushing of eyes in case of chemical exposure or particles in eyes	Kitchen sink near machine shop
Automatic External Defibrillator	Cardiac emergency	Up elevators to first floor, north of elevators

Policy on Lab & Shop Use

Certain activities require the presence of at least two people in the iSTAR lab and shop. Some activities must be supervised by PSU faculty or staff.

For the following tasks, the second person may be another student within voice communication distance:

- Use of machine tools equipment/large tools that plug in
- Welding
- Working on ladders
- Operating the crane for work that is not overhead and when there is clear visibility

Policy on Lab & Shop Use (continued)

For the following tasks, the second person may be another student who must be directly observing or "spotting" the activity:

- Crane operations involving overhead work and/or when visibility is obstructed
- Forklift operations
- Use of cutting torch (spotter must have a fire extinguisher)
- Using fall protection
- Operating the hydraulic equipment

For the following tasks, the second person must be PSU faculty or staff:

- New or untried procedures and tests
- Work entailing new or significant hazards; check with PSU faculty or staff if you are unsure

Operations Requiring Training

Several activities in the iSTAR lab required specific training, including:

- Forklift Operations - Students must receive training prior to operating forklifts.
- Overhead Crane Operations - Students must receive training or demonstrate mastery prior to operating the crane.
- Working at Heights – Students must receive training prior to working on ladders and/or using fall protection equipment.
- Welding – students must receive training or demonstrate mastery prior to welding in the iSTAR lab.
- Machine Shop Tools – Students must receive training on safe use of each tool prior to use or demonstrate mastery or prior training (e.g., completion of ME 241).
- Working on Hydraulic System – Students must receive training on hydraulic safety awareness (including injection injury potential and lockout/tagout) before working with hydraulic equipment.

Personal Protective Equipment (PPE)

Hardhats are required any time there are potential overhead hazards, such as when driving or spotting the forklift, using or spotting the overhead crane, using the strong floor or spotting someone working at heights.

Safety toe boots are required any time there are potential toe crushing hazards, such as when moving heavy tools or building materials, driving or spotting the forklift or using or spotting the overhead crane.

Personal Protective Equipment (PPE) (continued)

Eye protection is required when conducting activities that generate dust or metal filings; activities that could result in oil or chemical splashes to the eyes; or activities that present other hazards to the eyes. Specialized eyewear is required for welding activities.

Various kinds of gloves are available for hand protection as needed, such as when grinding, welding or moving heavy objects.

Concrete is a silica-containing material that require special handling when dust is generated. The following practices need to be followed for these activities:

- sweeping or collecting broken dry concrete - mist or otherwise wet the area prior to sweeping.

- drilling, chipping or rotor-hammering dry concrete – work outdoors, or when indoors continuously mist or use dust collecting vacuum at the location of exposure along with a respirator.

- mixing, all concrete mixing must be performed outside

Dust masks are available for use in dusty conditions, such as sawing or other activities that generate filings, wood dust, etc.

Housekeeping

Proper housekeeping is essential for your safety and is required by the Fire Marshal.

- Maintain clearance to fire exits
- Minimize accumulation of combustible materials such as cardboard boxes
- Clean up wood and metal debris immediately
- Clean up spills of oil or other chemicals immediately. See “Emergency Procedures” if you need assistance with a spill.
- Return tools, equipment and materials to their appropriate storage location immediately after a task is completed.

Personal Safety and Lab Security

Do not prop doors to iSTAR open when working alone or after hours. The last person to leave the lab must conduct a walkthrough of the space to ensure doors are secure. If

you are unsure of the identity of a visitor in the lab, ask them for identification and the purpose of their visit. Call CPSO at 5-4404 for urgent security concerns.

Handling Hazardous Materials

Before handling and using chemicals you must be aware of their hazards. Read chemical container labels or consult Safety Data Sheets. The EHS website provides access to a database of Safety Data Sheets http://www.pdx.edu/environmental-health-safety/msds-search. Hard copies are maintained in a binder above the chemical storage cabinet.

Handling Hazardous Materials (continued)

Identify and use appropriate personal protective equipment (PPE) when using the chemical, such as gloves and protective eyewear. Take appropriate precautions based on known chemical hazards. For example:

- Do not use flammable chemicals near open flames or welding activities.
- Ensure appropriate ventilation when using epoxies, mixing fiberglass, or using other volatile chemicals. Some activities may need to occur outside for adequate ventilation.
- Store compressed gasses upright and chained to the wall or cart.

If you have questions regarding hazardous materials, ask iSTAR faculty or staff, or contact EHS at 5-4312 or in SRTC 144.

Incident Reporting Policy

Accidents, damaged equipment, “close calls,” and potentially hazardous situations or conditions must be reported immediately to the laboratory director (Dr. Peter Dusicka) and any relevant faculty, staff or EHS. Reporting these events will ensure that potential hazards are addressed to prevent further injuries to people and damage to equipment and research.

Delays in reporting accidents, damaged equipment, “close calls” and potential hazards can cause serious safety problems. Individuals responsible for delays in reporting may be removed from courses or other CEE lab or shop activities.

Zero Tolerance Policy

Use of alcohol or illicit drugs is not allowed in the iSTAR lab. Working in the lab under the influence of alcohol or drugs is not allowed. Be aware of potential side effects of prescription and over-the-counter medications and do not work in the iSTAR lab if medication labels warn against driving or operating heavy equipment, or when other side effects could result in unsafe working conditions.

Individuals found to be using or under the influence of alcohol or illicit drugs in the iSTAR lab will be removed from courses or other CEE lab or shop activities.