

SHOP SAFETY PLAN

Paul G. Allen School of Computer Science & Engineering

UNIVERSITY OF WASHINGTON

Bill & Melinda Gates Center for CSE (CSE2 G15)

Paul G. Allen Center for CSE (CSE 615)

February 7, 2024

I. Purpose

This Shop Health and Safety Plan addresses the potential hazards associated with shops and supplements the UW Accident Prevention Plan and Allen School Supplemental Accident Prevention Plan.

II. Scope

This plan applies to any space which meets the definition of a shop as defined herein at all locations that serve as assigned workplaces and educational settings for University of Washington faculty, staff, and students.

A. Shop

A shop is defined as a designated room or area where fabrication and repair activities occur, using tools and machinery that present physical hazards to occupants. Shops at the university include a broad range of uses that support teaching, research and facility maintenance and repair where physical hazards from tools and machinery are more prominent, and would be considered hazardous to an untrained person.

III. Responsibilities

A. Shop Safety Coordinator

Alexander Lefort, the Fabrication Research Lab Manager, has been appointed as the shop safety coordinator and has authority and responsibility to maintain and implement this plan and the following:

- Limiting shop access to authorized personnel
- Orientation and training of employees and students
- Maintaining a safe environment and restricting access to unsafe facilities, equipment and tools
- Enforcing safety rules and procedures
- Ensuring employees access to chemical and material safety information in the form of safety data sheets (SDSs)
- Maintaining safety records (safety plan, training documentation, SDSs, and SOPs)
- Ensuring personal protective equipment (PPE) is maintained, readily available, and used when needed
- Review and report accidents and incidents using the Online Accident Reporting System (OARS)
- Performing shop self-audits and follow-up on corrective actions
- Coordinating with Environmental Health & Safety (EH&S) for safety surveys and accident investigations
- Ensure safety of visitors

B. Employees and students

Employees and students with access to the shop have a responsibility to:

- Know and comply with safety guidelines and policies required for all assigned tasks.
- Report unsafe conditions to your shop's safety coordinator, your immediate supervisor, the Departmental Safety Officer, or to EH&S (206-543-7262). If you identify a procedure or assigned task as being exceptionally risky, you should perform it only after you believe the risk has been reduced to an acceptable level.
- Report accidents and incidents to your supervisor, and to the university using the Online Accident Reporting System (OARS) at www.ehs.washington.edu/workplace/accident-and-injury-reporting.
- Select, maintain and use PPE appropriately, consistent with your training and shop rules. Students may be required to provide their own PPE for use in shops.

IV. Shop Protocols

A. Controlling access

Limiting and controlling access is critical to preventing untrained or unauthorized persons from incurring injury. This is particularly true in an academic setting where a shop may be part of a group of rooms in a large building with hundreds of occupants.

1. Access will be controlled by keeping doors closed and locked when administrative controls are not in place (i.e., the shop safety coordinator is not present), proactive inquiry by the shop safety coordinator and other authorized users, posting signs indicating the shop is a space requiring authorization to enter, and floor marking.
2. Access to machines where the potential of personal injury and/or damage to the device and facilities is heightened will be controlled via scheduling and locking mechanisms. Specific machine training will be required before card access is granted to these machines. This pertains to all wood working machines, laser cutters/engravers, large-scale CNC mill and router, and Desktop Metal 3D Printer.
3. Access to power hand tools is restricted to only times when the shop safety coordinator is present. These are held behind a door with keycard access.

B. Access to safety information

1. This plan and associated materials will be electronic, paper or a combination, but all information must be accessible at all times to all personnel who work in shop areas. If the shop safety program is all electronic, personnel must know where the files are located and how to access them. If multiple rooms are included in the shop, the plan must be available without having to get a key.

from another person. It must also be available on request to EH&S staff and Washington State Department of Labor & Industries representatives.

2. This plan and all associated SOPs, SDSs, and other pertinent safety information will be located on the Fabrication Research Lab website: <https://fablab.cs.washington.edu/safety-information/>. This site is additionally linked via QR code and URL on the Fablab safety board, and on the desktop of all Fablab laptop computers, located at the entrance of CSE2 G15 in front of the safety information board.

C. Housekeeping

All employees and students have a responsibility to maintain a clean, uncluttered environment. Specific expectations are provided here.

1. All tools and materials will be stored neatly and in their place when not in use.
2. Establish and maintain clear access to safety equipment, exits and electrical panels.
3. Counter tops and tables will have adequate work space and be free of clutter.
4. Floors will be clear to minimize trip hazards.
5. Garbage and debris will be removed regularly to prevent clutter and reduce combustible loading.
6. Chemical containers must be closed and properly stored.
7. Equipment, tools, and chemicals must NOT be removed from the lab unless written permission from the shop safety coordinator has been given.

D. Hazard communication

All those who work in areas with hazardous chemicals must have access to essential safety information while they are at work.

1. A complete and accurate list of chemicals will be maintained in the online MyChem inventory management system located at www.ehs.washington.edu/chemical/mychem.
2. SDSs must be available for each chemical either electronically or in paper form in the location where the materials are stored or used.
3. MyChem inventory and SDSs will be accessible digitally via a shortcut on the Fabrication Research Lab laptop fleet desktop screens, as well as via the desktop- and mobile-compatible Fabrication Research Lab website: [Fabrication Research Lab Safety Information - Fabrication Research Lab \(washington.edu\)](https://fablab.cs.washington.edu/safety-information/).

E. Working alone

Working alone is not allowed for high risk activities such as the use of rotating and cutting powered machinery, lifting heavy loads, working with hazardous materials that present acute physical or health hazard(s), working from heights, hot works, energized electrical work and working in confined spaces.

In addition to the general criteria above, the following specific activities are not allowed when working alone:

Any work done in CSE2 G15A after 6:00 PM on Monday through Thursday, or any time during the weekend.

Exceptions:

Laser cutters and 3D printers, provided training has been completed.

F. Safety training

Employees, students and visitors authorized to use the shop will be appropriately trained before they are granted access to the shop, equipment and tools. Access may be granted to visitors under direct supervision if proper controls are in place and proper personal protective equipment (PPE) is issued. Training will include the following:

1. General safety training, such as the use of fire extinguishers.
2. Training on how to select and use PPE.
3. Training associated with a specific procedure, machine or equipment.
4. Chemical hazards training, if applicable.

Shop training classes and refreshers need to be taken according to the matrix [Safety Training for Shop Personnel](#) found on the EH&S website.

Retraining will be conducted whenever there is a change in job assignment, a change in machinery or equipment, or process change that presents a new hazard.

Records will be kept for at least three years after separation of the user from the University for training and assessments.

Training records, including new employee/student orientation, will be maintained in the following location: CSE2 G15B, Fabrication Research Lab Manager filing cabinet, as well as electronic records via the Allen School Shared Drive:

W:\Operations\Facilities\Space\Fabrication Research Lab Info\Safety\Safety Training.

G. Personal protective equipment (PPE)

A PPE Hazard Assessment will document the hazards and PPE required for the shop. All employees shall be trained on PPE requirements and training will be documented. Use the [Shop PPE Hazard Assessment Guide](#) on the EH&S website.

PPE training documentation is included in the general shop safety agreements and in electronic records.

H. Standard operating procedures (SOPs)

The shop will develop and maintain standard operating procedures for work that involves the use of hazardous equipment or substances. The shop safety coordinator or designee will observe workplace operations, identify hazards and develop written procedures to prevent injury. When procedures or equipment change, a new assessment will be conducted.

See Fabrication Research Lab website, SOP section, for SOPs and a list of active equipment: <https://fablab.cs.washington.edu>.

Template SOPs for the shop are available for reference at www.ehs.washington.edu/workplace/shop-and-maker-space-safety

The shop's responsible person must ensure all shop staff understand that new and changed procedures must be assessed for hazards. The shop safety coordinator or another person familiar with the shop's procedures must assess those procedures and determine controls to adequately minimize risks.

I. Reporting incidents

1. Report any work-related incidents and near misses using the Online Accident Reporting System (OARS). Also report incidents and near misses for students and visitors.

To access OARS: <https://www.ehs.washington.edu/workplace/accident-and-injury-reporting>

J. Safety inspections

1. At least annually, the shop safety coordinator will perform an inspection of the shop to identify hazards and follow up to mitigate the hazards identified. These inspections are to ensure proper use of shop equipment and to provide a check on the continued adherence to safe work practices and procedures.
2. EH&S maintains a general checklist to assist departments in performing shop safety inspections. The checklist is available online:

www.ehs.washington.edu/resource/shop-safety-self-inspection-checklist-364