

Industrial Design Lab Policy

Revision Date 2.2.2015

A. Introduction: The following lab policies are intended for all users of the Industrial Design laboratory spaces, including rooms ET 128 and 344. Additional rules may apply in other labs of the building.

Failure to follow the following policies can result in consequences ranging from a temporary loss of lab privileges, grade penalty for lab assignment, additional lab cleanup due at the end of the quarter, fines, and/or ejection from all ID labs for the quarter (and the consequent effect on grades in ID courses) or dismissal from the ID program altogether.

The ID lab is appropriate for ID model making and prototyping. The ID lab is not for doing composites (fiberglass, carbon fiber, Kevlar) layup or curing. Nor is it for welding, brazing, or any high-heat application work. See the technicians for appropriate labs for doing this work.

This document must be read carefully and a copy signed on the last page.

B. Overview:

1. Authorization for Lab Use:

ONLY authorized, Engineering & Design (E & D) Badge Holding persons are allowed to use Industrial Design Labs. Authorized persons are students who:

1. Are industrial design majors or pre-majors.
2. Have completed in ID 210 (sophomore ID 1: woodworking/model making)
3. Attended the E & D Engineering Lab Orientation General Assembly,
4. Successfully completed the Environmental Health & Safety (EHS) Hazardous Waste Quiz.
5. Have and wear the E & D lab badge.
6. Or students with written permission from Professors Morris, Oslapas or Technicians.

2. ID Lab Access Hours:

Standard hours: Monday thru Friday 8:00 am – 9:00 pm

Access is limited during Junior and Senior Studio Class sessions (check schedule for times)

Extended hours: After 9:00 pm and on Saturdays and Sundays the lab may be accessed **with restrictions on tool use and other precautions.**

Restricted Tools: The following tools, due to their potential danger, may not be used during extended hours:

1. Chop saw
2. Table saw
3. Circular saw
4. Band Saw
5. Lathe
6. Milling Machine

Additional precautions during extended hours

1. At least two students must be in the lab at the same time. No one may work alone.
2. At least one student present must be CPR and first aid trained
3. ID pre-majors (sophomores) may not use the lab unless at least one ID major (senior or junior) is present in the studio area.

Periodically the labs may be closed during these times, due to maintenance, improper usage, or safety hazards. No one shall work in the lab when the lab is closed. This will be indicated with signs on the doors. Propping doors open is not allowed due to fire hazards and security. Forced or unauthorized entry will be convicted as a crime and reported to University Police.

4. Other Engineering Labs:

Each lab in the engineering building may have additional rules and requirements that are specific to its facilities. Students are required to learn, understand and follow these requirements.

CNC Machining lab: Students must have a manufacturing plan, and dimensioned part drawings ready. Meet with a technician to review first.

Composites Lab: Additional requirements regarding cleanliness and material handling are very important. Meet with a technician to review your plans and objectives first.

C. Safety:

Maintaining an optimum level of safety is the responsibility of each person using the lab. Safety is, to a large extent, a matter of attitude and depends on each person's knowledge of safe practices and concern for safe working conditions for all lab users. Power machinery operation and chemical management are a major concern.

1. **Safety glasses and Engineering & Design Badges** must be worn in all ID labs at all times. Students are required to purchase their own safety glasses and replacement badges if necessary.
2. **Safety Data Sheets (SDS)** formerly MSDS: consult SDS to determine necessary safety measures required when using chemical reagents, resin additives, compressed gases, commercial products, etc. SDS files are located in the main office Room 204. Web access to

SDS will be available in the near future (prior to 01.01.2015) through an EHS program called Chimera.

3. **Personal Protective Equipment (PPE):** PPE is available throughout the labs for student use; included are hearing protection, face shields, nitrile gloves, dust masks, etc. If you cannot find what is needed, ask a technician or faculty.
4. **Respirators** are also PPE and can be used with both particulate matter and volatile organic chemicals. Students must provide their own respirator after EHS Training & fit testing. Respirator training and fit testing are available through EHS in conjunction with classes and to individuals. Respirators are required when SDS defines their use based on the materials students work with.
5. **Apparel required at all times:** Closed toe shoes; long pants; hair ties for those with long hair; long sleeve cotton shirts for hot work. A shop apron is recommended. No neck wear (scarves, ties) is allowed.
6. No food or drink in labs.
7. No smoking within 25 feet of the building.
8. **All flammable materials** must be under direct student control or properly stored in a Flammable Cabinet. All container lids must be closed unless dispensing.
9. **Ventilation must be utilized** in labs.
 - a. **Dust Extraction:** the removal of particulate material from cutting tools and sanding.
 - i. Dust extraction from floor machinery (saws, sanders, etc.).
 - ii. Sanding dust extraction from downdraft tables.
 - iii. Dust masks or respirators fitted with particle filter should be used with dust extractors.
 - b. **Air handlers** such as exhaust fans, snorkels, low flow hoods, fume hoods, etc. that draw airborne fumes away from workers.
 - c. **NOTE:** Respirators fitted with the appropriate absorbing cartridges are often an important supplement to air handlers.
10. **Music** - using personal headphones are prohibited when using any E + D Lab space. It is critical that workers can hear equipment during operation as well as warnings from others.
11. **Unsafe Conditions:** Although every effort is made to maintain the lab in a safe operational condition, there will be occasional breakdowns and problems that need immediate attention. If you should observe such a condition, particularly with a power machine, electrical component, ventilation system or any other suspected hazard, please report this to the instructor or technician immediately for corrective action.
12. **Injuries:** Any injury (requiring a band aid or more treatment) must be reported to faculty or staff; an Accident Report must be filed with the Department Office. The machine that was used must be identified for inspection by a technician.

D. Machine Operation Safety:

Knowledge of safe operating practices and maintaining safe working conditions, is paramount in the operation of ALL power machinery.

1. **Training:** Each person may only use equipment for which he/she has received specific training from the faculty/technician on safe operating procedures and potential hazards. Failure to observe safety precautions when using any piece of equipment may result in ejection from the lab. This includes failure to use appropriate PPE. Individual help from the faculty/technician is continually encouraged. The mill and lathe may only be used with the completion of training in the machine metals course, or special training and permission.
2. **Power Equipment & Students:** The users of any power equipment must be sure they understand the operational procedures and safety requirements for any machine they use; Ask questions if in doubt!
 - a. Students can use the following equipment **ONLY** when another person is in the same room: **Table Saw, Band Saw, Chop Saw, Drill Press, Lathe, Milling Machine**
 - b. Adjustments to machines should only be done with power off.
 - c. **Guards** on machines are provided for your protection and should not be removed.
 - d. Guards may only be removed for special operations and require permission and inspection by the faculty/technician prior to using the machine.
 - e. ALL LAB USERS must know the location of EMERGENCY STOP SWITCHES in each lab.
 - f. No running equipment is to be left unattended.

E. Materials:

Chemicals, paints, resins, adhesives, etc. The ID lab (room 344) is not for doing composites (fiberglass, carbon fiber, Kevlar) layup or curing. Nor is it for welding, brazing, or any high-heat application work. See the technicians for appropriate labs for doing this work.

1. All materials brought into the Engineering & Design Building must be checked in by a technician **PRIOR TO BRINGING THEM INTO THE LAB**. SDS should accompany the material.
2. Flammable, toxic, corrosive materials and oxidizers require careful handling; Consult SDS for PPE appropriate to the lab activity and use proper ventilation when using such chemicals.
3. This lab spray booth is primarily for spray can finishing. If you intend to work with stains or other liquid finishes, clear your plan with a technician first. Work out the safety and disposal issues first. See Spray Booth section H for specific instructions.
4. Sanding. Use of the downdraft table is encouraged and proper ventilation must be used. Sanding of hazardous materials (ex: polyurethane foam) requires use of a respirator with P100 Niosh filter or equivalent- notify neighboring shop users and be weary of how materials can be hazardous when airborne as fine particulate matter.
5. All materials must be **properly labeled**; this means the original label or a suitable material label (available in lab to be filled out by the user) for transfer containers; reaction containers, e.g. steel cans used for composites resin mixing, need tape labels that describe the following:
 - a. Student Last Name(s)
 - b. Material Name
 - c. Course #
 - d. Date
 - e. Primary Hazard

6. **Hazardous waste:** Failure to properly label a container requires disposal of the material as hazardous waste, which costs approximately \$100 per container. This \$100 cost will be charged to the student or spread equally among all students in the course. This fee is in addition to the lab fee already paid for the course.
7. **ALL chemicals** must be properly disposed of. No chemicals are to be dumped in any sink or waste basket. If you don't know how to dispose of something, ask faculty members or the technician.

F. ID Studios:

The ID studios are for clean work, such as drawing, rendering, paper, foam core, fabrics, glue guns, laptops, projectors and student meetings.

1. No sanding is allowed in any of the studios.
2. No applications of stains, epoxies, or any off-gassing finishes are allowed.
3. No heat guns or any powered machine tools are allowed.
4. No tools from the ID shop should leave the shop.
5. No spray glue is to be applied in the studio.

G. Spray Booth

1. This lab spray booth is primarily for spray can finishing. If you intend to work with stains or other liquid finishes, clear your plan with a technician first. Work out the safety and disposal issues first.
2. NO flammable materials may be left in the spray booth (including aerosol cans, scrap paper, wood, paper etc.) Violation of this rule will result in an immediate \$100 fine.
3. Finishes, paints, fillers, or any process that off gasses MUST be applied and left in the spray booth until off gassing is complete.
4. Fan must be on during application and drying of all paints, fillers, etc.
5. Spray cans must be labeled with a piece of tape and the name of the owner unless they are for communal use.
6. Both eye protection and a respirator protecting against organic vapors must be worn at all times within the spray booth.
7. All items left unattended in the spray booth to dry must be labeled with name and dates or they may be subject to disposal.

H. Clean Up:

Required before you leave the lab space that was utilized.

1. All **work spaces must be cleaned** and tools cleaned and put away in the proper location before leaving the lab. Any tools left out may be locked up for the remainder of the quarter. Leaving a dysfunctional work space may result in a grade penalty for the assignment or additional lab cleanup.
2. All messes including dust, scraps, and pieces of materials must be cleaned immediately after leaving a particular station (i.e. sanding area). A failure to do so will result in an official offense

as well as all materials left being disposed of. Please use discretion with size and usability of scrap material saved.

3. Any equipment or projects **left unattended** at any time MUST have the owners' name and date returning attached in a conspicuous location. Projects with no name may be discarded.
4. **All tools must be cleaned** and returned to their proper location, and drill bits must be removed from the drill press and returned to the correct location for their storage. Tools that are not being actively used should be returned to their home and available for other students to use. Workstations and machines must be lightly cleaned while being used as well as thoroughly cleaned once the shop.
5. The **sinks** in the lab represent a special problem. Sinks are intended for water only. Do not allow resins, plastic wastes, plasters, etc. to enter the drain. Containers are available for proper disposal of these materials.
6. Do NOT throw away any objects without talking to a technician. We have many small pieces of tooling and accessories that you may not recognize. Missing or unrecognized tools or parts must be placed in The Box (located in the left hand corner of the downdraft table) for Steve James to identify and return to their proper location/machine.

Western Washington University

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Acknowledgement:

I have read and understand the ID lab policy as stated in this document. And I will abide by these rules throughout my time as a student at WWU. I understand that violating these rules may result in consequences ranging from a temporary loss of lab privileges, grade penalty for lab assignment, additional lab cleanup due at the end of the quarter, fines, and/or ejection from all ID labs for the quarter (and the consequent effect on grades in ID courses) or dismissal from the ID program altogether.

Date: _____

Name (printed) _____

W# _____

Signed _____