



## **CSULB DEPARTMENT OF DESIGN**

### **STUDIO AND SHOP SAFETY GUIDELINES**

The Design Department Shop Manual is intended to provide procedures and practices for safe, effective use of the Design Department Shops as a supplement to instruction by a Design Department Faculty Member. The rules and guidelines outlined herein are not exhaustive and shall not be construed to exclude specific direction or instruction from a Faculty Member.

#### **SHOP USAGE RULES**

- Shop Safety is Your Responsibility
- Awareness of what is going on around you is required at all times
- There is a potential danger from: electricity, tools, machinery, equipment, materials, fasteners, chemicals, loud noises, airborne dust and from flying and loose debris within the Design Department Shops.
- Use of the Design Department Shops is a privilege that can be revoked by any Faculty Member or by the Technical Assistants (SA's)
- Students that have not successfully completed DESN 151 (Industrial Design Tools and Materials) are not permitted to work in the Design Department Shops without the presence and permission of a Faculty Member or Student Assistant.
- If a class is in session, you must patiently wait for an opportunity to ask the instructor or a SA if you may use the shop. Permission may be revoked at any time by the instructor or SA.
- The occupant limit for the shop is 28. An instructor or SA may decide that the shop is beyond safe capacity even if the occupant load is less than 28 and ask students not enrolled in an ongoing class to leave.
- Fighting, roughhousing and abusive language are always prohibited. If you are caught roughhousing in the shop, you will lose your shop privilege for the day.
- Smoking is not permitted in the shops.
- Headphones and earbuds are not to be worn or used within the shop
- Food and Beverages may be permitted in the shop by the instructor during lectures, but are limited to the instructional worktables and shall be stowed away at the direction of the Instructor or SA, or when requested by another student sharing the worktable.
- Personal items such as purses, bags, books, laptops, and backpacks are to be stowed away and secured by the student and are their responsibility.

- The shop is not an appropriate place for visitors. Guests are not allowed except at the specific invitation of the instructor.
- Report all injuries, regardless of severity, to your instructor.
- Do not work in the shop if you are exhausted, ill, upset, under the influence of substances or medication that impairs your ability to think clearly and respond quickly.

#### **FOLLOWING DIRECTIONS**

- Students are expected to follow the directions given them by an instructor or SA both in the presence of the Instructor/SA and after the Instructor/SA leaves
- When directed to “Stop” by an instructor or SA, the student is expected to safely stop what they are doing and to give the Instructor or SA their full attention.
- When an instructor or SA calls for “Clean-up”, all students working in the shop are required to stop their work and help clean the shop regardless of how long they have been working in the shop or whether they contributed to making a mess. Students are not to resume work until directed to by the Instructor or SA.
- Failing to contribute to clean-up may result in either the student being assigned a “special” cleaning task or loss of shop privileges.

#### **SIGNING IN & CHECK OUT**

- If you wish to work in the shop outside of a regularly scheduled class, you must get the instructor's permission and sign in at the tool room upon arrival. Your ID card will be kept in the tool room if you work in the shop.
- Remember to clean up, check out, return all tools, and pick up your ID before you leave.
- Tools are checked out first come first serve.
- Tools should be returned when you are finished using them so that others may use them.
- Tools MUST be checked in at the end of each class or shop session.
- Shop tools may be checked out for 24 hours by upper division students.
- Tools should be clean and in working condition when checked out and when returned.
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#### **CONSIDERATION OF OTHERS**

- Be thoughtful and helpful toward other students in the class.
- Be sure that the work you are doing does not endanger someone else.
- Be considerate of the work of others and get permission to move or handle their work or property before moving or handling it.
- Maintain your work area in a clean orderly fashion out of consideration to the people sharing your work bench
- Politely and safely caution other students if they are violating a safety rule or inform an instructor or SA.

- If you see another student clearly needs help, assist them if you know how to do so safely and effectively.

### **COURTYARD**

- The courtyard may be used with permission for working on large projects and for loading and unloading material.
- Parking is not permitted in the courtyard by students.
- Do not use extension cords in the courtyard
- You are required to clean up after yourself just as though you were working in the shop

### **TOOL ROOM**

- You are not permitted in the tool room.

### **STOCK ROOM**

- You are not permitted in the stock room.

### **SPRAY BOOTH**

- You must fill out a spray booth agreement prior to using any of the department spray booths.
- You may not enter the spray booth when the spray booth ventilation system is turned on (when you see the red light on over the door).
- If you wish to enter the spray booth and the red light is on, knock on the door and wait for the person(s) inside to turn off the ventilation system prior to opening the door.
- The spray booths are the only locations in the department of Design where you can use aerosol paints or adhesives.
- Always close the door and turn on the ventilation system prior to using the spray booth to apply aerosol paints or adhesives.
- Always turn off the ventilation system prior to opening the spray booth door.

### **STORAGE**

- Project storage space is extremely limited. The lockers under your work benches are available first come, first serve. You are welcome to find an empty locker and put your material in it, but you must provide and use a lock. You must clean out the locker when you are finished using it.
- Do not use lockers identified as "SA Only".
- At the end of each semester (after finals), shop lockers will be emptied, and the contents disposed of or contributed to the shop.

- Large storage lockers are available in the storage room at the front of the building. These lockers may be checked out for the semester through the front office (see Arnel). You must pay a fee for the semester and use the locks provided.
- Improperly stored materials may become Shop property.

## **SAFETY RULES**

### **EAR PROTECTION**

- Wear appropriate ear protection when you feel it is needed. Ear protection is available by the First Aid Station and earmuffs in the Tool Room.
- No music headphones, such as iPods, are allowed in the shop.

### **EYE PROTECTION**

- You must purchase and wear Polycarbonate safety glasses or goggles or a Polycarbonate face shield when working with hand or power tools and doing any operation that may endanger your eyes.
- Most prescription eyeglasses are made from Polycarbonate material, but do not provide complete protection at the sides. Safety goggles can be worn over prescription frames. Sunglasses are not permitted as eye protection.
- The wearing of contact lenses is discouraged due to elevated levels of dust in the shop.
- Be sure you have enough good light to see what you are doing without straining your eyes.
- When working with machinery, keep your eyes on the cutting action.
- Concentrate on what you are doing.

### **HAIR & CLOTHING**

- Dress properly for your work.
- Close toed shoes are required in the shop at all times
- Remove coats and jackets and roll up loose sleeves. It is advisable to wear a shop apron that is snugly tied. Loose clothing is dangerous because it may become entangled in moving parts and pull the operator into the machinery.
- Do not wear gloves when working with equipment.
- Long hair should be tied back away from face and not allowed to “fall” into your work.
- Remove and secure any rings, bracelets and necklaces that are not secured under your shirt.

### **BREATHING PROTECTION**

- Wear a dust mask when performing operations that produce a lot of dust.
- Spray adhesives, spray paints, paint thinner, lacquer and lacquer thinners, Bondo, resin, epoxy and other adhesives contain volatile compounds that are unhealthy to breathe. Use these materials and compounds only in well-ventilated spaces.

## **LIFTING**

- Protect your back muscles when lifting heavy or awkward sized objects.
- When moving an ungainly object, have someone help you.
- Lift heavy objects with your arm and leg muscles not your back.
- Do not twist at the waist while lifting
- Secure help with long boards, even if they are not heavy.

## **CONFIDENCE**

- Overconfidence leads to carelessness, and carelessness causes accidents. Fear can cloud your thinking and make you careless as well. A safe attitude is one of careful respect for what machines can do.

## **BENCH ORGANIZATION**

- Students are responsible for maintaining a neat and tidy work area and for cleaning up after themselves.
- Keep your project materials carefully organized on your bench with tools located near the center.
- Do not pile tools on top of each other.
- Never allow edged or pointed tools to extend out over the edge of the bench.
- Close your vise when it is not in use and see that the handle is turned down.
- Keep drawers and cabinet doors closed.

## **CLEANLINESS**

- Keep your hands clean and free of dirt, oil and grease, you will do better and safer work, and the tools and your project will stay in good condition.
- Keep machine decks clean. Remove all tools, lumber, and unnecessary materials. Objects left on the machine can vibrate into revolving cutters. They can then be thrown from the machine with great force.
- Never clean or adjust a machine while it is running.

## **FLOOR SAFETY**

- The floor should be clear of excessive litter. Periodically clean the floor around your workspace rather than letting dust, scrap material and debris build up.
- Keep projects, sawhorses, and other equipment and materials you are using out of traffic lanes.
- Immediately wipe up any liquids spilled on the floor.

## **CLAMPING STOCK**

- Whenever possible, mount your stock material in a vise or clamp. This is especially important when using chisels, gouges, or portable electric tools.

## **CARRYING TOOLS**

- Keep sharp-edged and pointed tools turned down.
- Do not swing or raise your arms over your head while carrying tools.

- Do not carry sharp tools in the pocket of your clothes, no screwdrivers, or wrenches either.

### **ELECTRICITY**

- Before you plug in a machine, make sure the switch is in the “off” position. You do not want the machine to start unexpectedly.
- Check your extension cord for damage before using it.
- When using a handheld power tool, be sure to keep the power cord away from blades and cutters while you work.
- To avoid electrocution, do not set electrical devices inside or on the edge of the sink.
- Coil up the excess length of your extension cord outside of the traffic aisles

### **FIRE PROTECTION**

- Secure the instructor’s approval before you bring any flammable liquids into the shop. You must provide MSDS’s for all chemicals you bring into the shop.
- Familiarize yourself with the location of all fire alarms and fire extinguishers.
- Many finishing materials, thinners, etc. are highly flammable. Others are toxic. Because of this, it is important that these materials be used only in approved areas (in the courtyard if not being sprayed or in the spray booth).
- Close cans of finishing materials and thinners immediately after use.
- Use flammable liquids in small quantities. Be sure the container is labeled.
- Dispose of oily rags and other combustible materials immediately or store them in an approved container.

### **MATERIAL STORAGE**

- Store and stack your project carefully in the Storage Shed.
- When retrieving material be careful of dragging, knocking, or pulling other material along with it.
- Be careful of splinters when moving wood or metal.

### **SAFETY GUARDS**

- Make sure all safety guards are in place before operating machinery. Never remove a safety guard without your instructor's permission.

### **MATERIALS**

- Defects in the wood can be dangerous. Check the stock carefully for knots, splits, and other defects. Check the stock for nails, screws, or other fasteners BEFORE running material through a machine.
- Pieces of wood with nails, loose knots, wet glue, or paint are not allowed on any of the shop equipment. Treated lumber requires special handling and is not allowed.

## **TOOL SAFETY GUIDELINES**

- Wear appropriate clothing. Remove coats or jackets and roll up loose sleeves. Tie back loose hair and remove rings and loose jewelry.
- You must be wide awake and alert. Never operate a machine when you are tired, upset, or ill. Never operate machinery when you are on medication that impairs your ability to work safely. NEVER operate machinery when under the influence of drugs or alcohol.
- Never use a machine you have not been trained to use properly.
- Do not attempt complex operations on a machine without discussing it first with your instructor.
- Do not play with the machines.
- Do not make or use jigs without the express permission of your instructor.
- If a blade or bit starts to burn your material, discontinue your procedure until the bit or blade has had a chance to cool down. Excessive heat may destroy the temper of the bit or blade and dull the forefront making it worthless.
- If a machine is dull, out of adjustment, or not working properly, shut off the power immediately and inform the instructor.
- Do not crowd around or wait in line behind an operator to use a tool. If you cannot wait a safe distance away, then ask the present operator to inform you of your workstation when finished.
- Use the right tool for the job you are doing. Use tools as they are intended to be used.
- Do not use the machinery tables as a worktable or storage area. Machinery is to be kept clear of material when not in use.
- If you are unsure of the proper process or procedure for achieving a particular result, consult your instructor or a SA.
- Do not use a tool unless it is sharp and in good working condition.
- Always measure and check the angle of your cuts. Do not rely on the machines to adjust correctly.
- Check with the Instructor or one of the Student Assistants if you have any questions.
- “When in doubt, don’t do it.”

## **STATIONARY EQUIPMENT**

- Think through the operation before performing it. Know what you are going to do, and what the machine will do.
- Machines should not be used for trivial operations, especially on small pieces of stock. Do not use a machine for an operation you can do easily by hand.
- When you are operating the machine, you are the only one to control it. Start and stop the machine yourself. If someone is helping you, be sure they understand their role (what they are expected to do and not do).
- Make all the necessary adjustments before turning on the machine. Some adjustments on certain machines will require the instructor’s approval.
- Disconnect the power when changing cutting tools; make sure the tool is off at its power source (or circuit breaker).

- Never remove or adjust a safety guard without the instructor's permission.
- Use approved push sticks, push blocks, feather boards, and other safety devices.
- Keep the machine tables and working surfaces clear of tools, stock, and project materials so that they do not interfere with your operation of the machine or vibrate into the forefront and potentially get thrown.
- Keep the floor around the machine free of scraps and excessive litter so that it does not interfere with your balance and stability as you are operating the machine.
- Do not allow your attention to be distracted while operating a machine. Also, be certain that you do not distract the attention of other machine operators.
- Do not start a machine with the material you are cutting touching the blade.
- Never leave a machine running unattended.
- Feed the work carefully and only as fast as the machine will easily cut.
- When you have completed an operation on a machine, shut off the power.
- Wait until it stops before leaving the machine or setting up another cut.
- Never touch any moving parts of the equipment with your hands (or any body part).
- Stay clear of machines being operated by other students. See that other students are "out of the way" when you are operating a machine.
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#### **POWER TOOLS**

- When working with power tools, stand in a comfortable, balanced position. Both feet should be firmly on the floor, but your knees should not be locked, and you should be loose and comfortable.
- Many power tools are the loudest thing in the shop. Wear ear protection whenever possible.
- Be aware of where the tool will start and end during your operation of it, to avoid getting stuck.
- Maintain the MARGIN OF SAFETY specified for the machine. This is the minimum distance your hands should ever come near the actual cutting tool while in operation.
- Be aware of power cords and where they may be and will be during any cutting procedures.
- Use only as much speed or power as required.
- Be cautious when finishing a cut and use less force right before you exit the material to prevent lurching forward.
- Be aware of the surface you are drilling, cutting, or routing on top of or next to and not to damage it as part of your cut.
- Most power tools are not directly hooked up to dust collection. Clean up immediately after your last cut.
- Remove checked drill bits or blades from the tool before returning and make the tool room attendant aware of any breakages or dull cutters.
- Clean and remove any residues on cutting surfaces before returning to prolong the tool life.



## **HAND TOOLS**

- Dull tools are the most dangerous thing in the shop in the case of them slipping. If there is a notable bit of extra resistance upon cutting, swap out for a fresh blade or entirely new tool.
- Get in the habit of changing matte cutting knives or box cutter blades for cutting every 30 feet of travel maximum, for edge quality and safety.
- Buy extra blades, drill bits whenever possible in case of dulling or breakage from accidents.
- Check your cut often in the process and take it slow to avoid ruining your work.
- Let the sharpness of the tool do the work, do not rush, or force the tool.
- Excess pressure can deform saw blades and too much will cause breakage.
- Alternatively, you should apply firm pressure when using a screwdriver to prevent slippage, stripping the head, and marring/puncturing surfaces.
- Do not twist or apply excess force in any direction other than the main cutting direction to widen a hole or cut, you will deform the tool or cause rubbing. This leads to heat which marks a workpiece and dulls tools.
- Always use a safety straight edge when cutting sheet goods by hand. Blades may occasionally jump up normal rulers and nick fingers if the user is too aggressive.
- Take multiple passes to cut thick material and be careful to not shift any guides or straight edges to prevent recuts.
- Hand tool accuracy depends on user skill. Practice your cuts before attempting on any expensive or hard-to-replace components.
- Safely store tools with protective cases if available to prevent accidental damage.
- Do not dispose of blades improperly in the trash. They can injure custodians at worst and rip open bags at best. Use blade disposal bins to keep them separated.

