WOODSHOP GUIDE

& SAFETY PLAN

Rooms Covered – Art 3D Annex 104
Responsible Individual – Victoria Shields 834-8461, office Art 3D Annex 104A
Department Safety Officer – Mark Bond, 834-1559, office Art 101
November 2, 2017

Emergencies

In case of fire exit through the loading dock door or the front doors. If those doors are blocked exit the building through the doors by the vending machines. Meet out in front of the Physical Plant next door towards the Rec Center. There are fire alarm pull stations near the exit doors, if you pull it also call 911 to inform them of the situation.

In case of an Active Shooter lock the hallway door, turn off the lights, hide out of sight and remain quiet. If you know the shooter is in your immediate area barricade the door with anything you can to prevent or slow entry and call 911. Silence your phone but check it or your email for instructions from TechAlert! Wait until there is an “all clear” announcement from TechAlert! before leaving, do not rely on social media for information.

In case of a medical or security emergency call 911, or use the blue emergency call box located in the hallway near room 105.

In case of a tornado or severe weather go to the center hallway or into the restrooms.

Chemical Spills
Small chemical spills can generally be handled in the studio with the spill containment kit. The spill containment kits is clearly marked and located underneath the sink. Spills should be handled in the following manner:

1. Assess the need to evacuate the lab /studio.
2. If you don’t know what the chemical is, call Environmental Health and Safety (EH&S) (806) 742-3876 (during regular business hours) or (806) 742-3328 (after hours).
3. Look up the chemical in Safety Data Sheet (SDS)
4. If you feel confident following the cleanup instructions on the SDS proceed with
cleanup.
5. If you don’t feel confident or don’t have the materials on hand for cleanup, because the spill is too large, call EH&S.
6. Report all spills that need more than paper towels cleanup to the SOA DCHO mark.bond@ttu.edu. He will arrange for waste pickup.

First Aid
1. There are eyewash stations in room 100 and 103. If you get irritating chemicals in your eye immediately splash water in your affected eye(s) for fifteen (15) minutes unless otherwise instructed. If you get foreign matter lodged in your eye (metal, wood, etc.) do NOT rub your eye! The eyewash station may not dislodge something stuck in your eye; you will need to go to the emergency room in that case.
2. The First Aid kits are located throughout the studios and are clearly marked.
3. There are two kinds of burns that need attention:
   a. Minor cuts / burns – can be attended to in the lab/studio. (examples – cuts that are not deep and stop bleeding and burns without large blisters) Minor cuts should be cleaned with antiseptic spray, alcohol wipes, or triple ointment. Cover them with a sterile Band-aid. Minor burns should be immersed in cool (not cold) running water for 15 minutes. Then apply a sterile bandage. Do not apply ice or ointments. If the wound does not heal properly seek medical attention.
   b. Major cuts / burns - these are deep cuts or burns that will need IMMEDIATE medical attention. (examples – cuts pulsing blood or will not stop bleeding, or more than ¼” deep or with jagged edges. Major burns develop large blisters or char the skin. Major cuts should have pressure applied with a clean compress. Major burns should NOT be immersed in cool water, but covered with a clean compress and held above heart level if possible. In both cases, seek immediate medical attention.

When in doubt, always seek professional medical attention – use the blue emergency box or dial 911.

The complete Texas Tech University Chemical Hygiene Plan and other helpful documents can be found online at http://www.depts.ttu.edu/ehs/Web/Default.aspx

Records of Employee / Student training are located in the School of Art main office.

Introduction
We at the School of Art endeavor to create a safe, healthy environment for all to work in so they can have a long and productive creative life. The following information will help you achieve these goals. Failure to follow the safety policies and procedures may lead to disciplinary action.
Be aware that words such as “water based,” “all natural,” and “organic” or “green” do not indicate the safety of a material. There are many items in nature that are hazardous to humans. Art supplies and materials may be “non-toxic” when “used as directed” but can become hazardous when not used as directed, such as heating, sanding or spraying the material.

Personal safety is usually more of an issue when fewer people are around in the evenings and weekends. Always be aware of your surroundings, know who is around you or not, keep your ears open by keeping music low and not using headphones. When working with machinery or hazardous processes always have more than one person present. Do not work when impaired by lack of sleep, illness, drugs or alcohol. All the buildings have combination locks on at least one door, so never prop open exterior doors to help keep unauthorized people out. The door leading to room 105, and the hallway doors can remain unlocked during open shop time, but not propped open since they are fire doors. Doors must be kept locked when the room is not occupied.

**General rules**

All students must have signed the Student Safety Training Form BEFORE they can participate in any hands on studio / lab activities.

The Safety Data Sheets for this studio are located next to the door in the yellow binder.

Chemicals and materials not listed in the Safety Data Sheet yellow binder cannot be stored or used in this lab without the consent of the Responsible Individual and the Safety Data Sheets being added to the SDS binder.

Any container other than the original container a chemical comes in is considered a “secondary container.” This includes open containers such as trays. Food or drink containers cannot be reused as secondary containers. All secondary containers (including water), must be labeled according to the OSHA GHS standard. The safety coordinator can answer GHS labeling questions. The RI will provide appropriate secondary containers.

No spraying may be done in this room. For approved locations contact your instructor.

All flammable and combustible liquids and gasses must be stored in the yellow flammable cabinet when not in use. After class, or any work sessions allflammables and combustibles must be returned to flammable cabinets. Lockers or open shelves are not acceptable storage for flammable or combustible liquids or gasses. NO EXCEPTIONS!

All solvents and corrosives must be barcoded into the inventory system by Environmental Health and Safety, including any that are student purchased. For details contact the SOA Safety Coordinator.

Procedures that are not listed in the Standard Operating Procedures section cannot be used without consent of the Responsible Individual and until the new procedures have been added to this Safety Plan.

Food and drink are not allowed to be stored or consumed in this room.
No tobacco use is allowed in the studio, including smoking, vaping and smokeless tobacco.

Long pants are required and closed toe shoes are required in this room.

When using a face shield, safety glasses or safety goggles must also be used.

Housekeeping is to be kept up with to provide a safe work space. Aisles and exits are to be kept free of slip, trip and fall hazards. Bench tops are to be free of excess storage and clutter. Extension cords can only be used temporarily and must be picked up at the end of class or work periods.

Sharp objects, such as xacto knife blades, utility knife blades and saw blades must be disposed of in an approved “Sharps” container, never the regular trash.

Art Installations must be pre-approved by the Safety Coordinator if they involve public spaces. If in doubt, ask first.

Never stand on anything other than a ladder or stepstool to increase your reach. Climbing on chairs, stools and tables frequently leads to falls and injuries.

Nothing can be hung or stacked closer than 18” (in the vertical dimension) to a fire sprinkler.

Do not hang anything from any pipes, sprinkler heads or conduit. You may hang objects of less than one pound from suspended ceilings. If you need to hang multiple objects get approval from the Building Manager first.

No bicycles, skates, roller blades, skateboards, scooters, etc., are allowed in buildings.

Pets and animals are not allowed in buildings. Service animals for persons with disabilities are permitted as long as they are in compliance with section 7 of TTU OP 34.22.

Children are not allowed in Studios / Labs without Minors in Laboratory forms filled out and approved in advance.

No smoking inside the building, including e-cigarettes or vaping, or within 20 feet of any doorway. No alcohol or illegal drugs in any Studios / Labs.

Wash hands upon leaving the studio.

**Standard Operating Procedures**

**BASIC SAFETY RULES FOR HAND TOOLS**

1. Always wear eye protection.
2. Wear RIGHT SAFETY EQUIPMENT for the job. If unsure ask the shop supervisor.
3. Use tools that are the RIGHT SIZE and RIGHT TYPE for your job.
4. Follow the correct procedure for using EVERY tool.
5. Keep your cutting tools SHARP and in good condition.
6. DO NOT work with oily or greasy hands.
7. Handle sharp-edged and pointed tools with care.
8. Always carry pointed tools by your side with the pointed and heavy ends DOWN.
9. SECURE all small work and short work with a vise or clamp.
10. NEVER carry tools in your pockets.
11. DON’T use tools which are LOOSE or CRACKED.
12. KEEP your punches and chisels in good condition. Mushroomed heads can chip and cause injuries.
13. DO NOT use a file without a HANDLE.
14. DO NOT pry or hammer with a file. It may shatter.
15. DO NOT use screwdrivers as chisels or pry bars.
16. DO NOT try to increase your leverage by using a “cheater” with wrench. Wrenches are designed at the right strength for their size and lengths.
17. AFTER USING A TOOL clean it and return it to its proper storage place.
18. If anything breaks or malfunctions-report it to shop manager AT ONCE.
19. Use the right type of tool for the job.
20. NEVER place tools and materials where they hang on the edge of a bench.
21. Don’t use tools for things they weren’t designed for.
22. Store tools and materials vertically, with the points and heavy end down.
23. Cut away from yourself when you use chisels and other edged tools.
24. DON’T FORCE screws. Make sure the correct screw for the job is being used.

PANEL SAW SAFETY

DO NOT use this machine unless you have been authorized and have been instructed in its safe use and operation.

1. Always wear approved glasses or goggles, hearing protection if needed and be sure dust collector is on. Secure all loose clothing, hair and hanging jewelry.
2. Clean table and area around panel saw before beginning to work and when you are finished.
3. Quick visual safety check of the machine to make certain that all safety devices are installed and in working condition and that no part of the machine are missing or damaged.
4. **Check the wood for foreign materials**, such as nails, screws, metal objects and stones that could cause damage to the cutting blade and the machine.
5. Panel saws are designed to cut large panels down to size. As the size becomes smaller and smaller other tools may become more convenient and safer to use.

6. **Keep hands out from under saw carriage at all times.**

7. **Material placement.** All material must rest securely on bottom rollers or the intermediate fence.

8. **Material must not be dropped onto the roller carriage.**

9. Cutting must always be done against the rotation of the blade. Vertical cutting must always be started at the top and continue till the cut is completed. Horizontal cutting must always be in the direction against the rotation of the blade.

10. Move the saw carriage or the material slowly, smoothly and whenever without stopping. Overfeeding results in poor quality cuts, shorten blade life and overload the saw motor.

11. **Cutting sides.** For best results place material to be cut into the panel saw with the back side facing the operator. This will provide the smoothest possible cut on the face side of the material.

12. **Lock saw carriage after each use.**

13. **CLEAN.**

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**TABLE SAW SAFETY**

**DO NOT** use this machine unless you are authorized and have been instructed in its safe use and operation.

1. First determine if this machine is the safest way to accomplish the desired task. Consider the panel saw for panels or the miter saw for cutoff.

2. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.

3. Clean the table and the area around the table saw before beginning work and when you are finished.

4. Make all adjustments to the saw before turning it on. Make all adjustments secure.

5. Saw only kiln dried lumber and plywood. No used lumber, treated wood, particle board, wood with splits, warps or loose knots. Check for staples or nails.

6. Keep the area clear between blade and fence.

7. Stock should have one straight edge before ripping on the table saw.

8. Adjust the blade to no more than 1/8 inch above stock.
9. Maintain a 6 inch zone of safety around blade. Always have push sticks ready before beginning cut. Use push sticks instead of hands to push stock through. If a person is helping with long stock, be sure they only support the stock and do not push or pull it. You, the operator, control the speed and direction of cut.

10. No freehand cutting of stock.

11. Clean the table saw when finished.

MITER SAW SAFETY

DO NOT use this machine unless you have been authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.

2. Clean the table and the area around the miter saw before beginning work and when you are finished.

3. Saw only stock which is free of dirt, paint, nails, splits, warps, and loose knots.

4. Make all adjustments to saw before turning it on. Make sure all adjustments are secure.

5. All stock to be cut should reach the edge of the aluminum table.

6. Do not force the blade through the stock.

7. Keep the saw in the lowered position and release the switch.

8. Wait until the blade comes to a complete stop before removing stock or raising saw.

9. Use clamp whenever possible to hold stock. Hands should be at least 6 inches from the blade.

10. Make all cuts with a forward motion. Never pull the blade through the stock.

11. Clean the saw when finished.

SLIDING CIRCULAR SAW SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always use approved safety glasses or goggles and hearing protection if needed. Secure all loose clothing, hair and hanging jewelry.

2. The maximum thickness of material is ¾ inch. Material over ¾ inch will cause the guards to bind and material will get stuck in saw.
3. Maintain 5 inch safety zone between hands and blade.
4. Material should always be against stop and held down with hand or clamp.
5. Be sure blade is not in contact with material before starting saw.
6. Allow saw to reach full operating speed before starting cut.
7. Do not force saw through material. A slower feed rate will give a better finish.
8. Let saw come to a complete stop before removing stock.
9. Clean machine and empty dust bag.

ROUTER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles and a face shield, hearing protection, and be sure dust collector is on.
2. Check with technician to determine safest method and selection of router bit.
3. For hand routing, secure stock to bench or saw horses. DO NOT hold stock with hand.
4. Unplug router to install or remove router bits.
5. Check router bit for chips or cracking and secure in router with proper wrenches. Insert bit all the way to the bottom of collet and raise 1/16 inch.
6. The workpiece must always be in firm contact with table fence or bearing mounted on the bit. NO freehand routing allowed. Guard must be in place over router bit.
7. Always keep hands and fingers 5 inches from bit.
8. Always feed stock against direction of bit. Right to left on the router table and left to right or counter-clock-wise around a piece of stock.
9. Be sure router comes to a complete stop before laying router down.
10. To control the stock, use push sticks, push blocks, feather boards or other safety devices whenever possible.
11. Cut at a moderate feed rate. Feeding too fast can cause tear outs and machine marks. Stopping in one place will cause burn marks.
12. Never start the router in contact with the stock.
14. Never cut stock unless it is at least 3 times the width of profile being cut.
15. Keep a balanced position when operating the router or router table. Do not over-ex tend
16. Small pieces of stock must be held with special holding jigs or clamps. Have technician help you set it up.
18. Clean router table.

DRILL PRESS SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved glasses or goggles, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Clean table and area around drill press before beginning to work and when you are finished.
3. Run drill press at correct spindle speed. Small bits-faster speed, large bits-slow speed.
4. Secure work to table with vise or clamps. Never hold pieces with fingers.
5. Never stop spindle with hand.
6. Remove chuck key immediately after adjusting chuck.
7. Always use a sharp bit. Do not use more pressure than necessary and ease up as bit begins to break through stock.
8. If bit binds, shut off machine and turn spindle backwards by hand.
PORTABLE AND FIXED JIG SAW SAFETY

DO NOT use these machines unless you are authorized and have been trained in their safe use and operation.

1. Always wear approved safety glasses or goggles and hearing protection is needed. Secure all loose clothing, hair, and jewelry.
2. These tools should be inspected before plugging them in. Check for any loose or missing parts and be sure the proper blade is installed. Check to see that the blade is sharp and is not bent.
3. When using the portable jig saw, the material should be secured to the saw horses or work bench with clamps. Make sure that the area to be cut overhangs the holding surface so that you will not cut into it.
4. Use both hands to operate the portable jig saw.
5. For internal cuts, you may need to drill a hole larger than the blade to insert the blade into.
6. Position the blade so that it is not in contact with the material before starting cut.
7. Saw should be at full operating speed before beginning cut.
8. Always maintain a comfortable operating position with a balance posture and body bent slightly forward to maintain a good view of the cutting line. Stop the saw and change position or reclamp material to maintain a comfortable position.
9. Let the saw come to a complete stop before removing the saw or the material.
10. On the fixed jigsaw, always push to the sides of blade, never directly towards it. Be sure that the pressure foot is close to the material and keep your fingers out of that area.
11. Do not use excessive force to feed the material. A fast feed rate will result in a poor finish.
12. When you are finished, unplug the machine, clean it, and return the portable jig saw to the proper storage location.
SCROLL SAW SAFETY

DO NOT use this machine unless you have authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection when needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Select correct speed and type of blade for the work you are doing.
3. Install blade with teeth pointing down.
4. Make all adjustments only when machine is turned off and unplugged from power source. Adjust blade tension before starting saw.
5. Adjust hold down foot so that it just barely clears the stock you are cutting.
6. Be sure material is not in contact with blade before you start machine.
7. Always push keeping your fingers to the sides of the blade. Never push with your fingers directly at the blade.
8. Do not let you fingers get into the hold down foot area.
9. Stop machine before removing scrap pieces.
10. If blade breaks, stop machine and replace blade or get technician to replace it.
11. Give the blade time to do its job. The teeth are small and you must feed your work slowly so you don’t break the blade. Don’t turn the stock unless you are feeding forward.
12. Put broken blades in the sharps container on the wall by the door.
13. Remove all scrap and clean the machine and table.

BANDSAW SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair and hanging jewelry.
2. Clean the table and the area around the bandsaw before beginning work and when you are finished.
3. Saw only stock which is free of dirt, paint, nails, splits, warps, and loose knots.
4. Make all adjustments to the machine before turning it on. Never open the wheel enclosure doors while the machine is in operation. Adjust the upper guide so that it is no more than ¼ inch above the work.
5. If the blade is not tracking properly or needs adjustment, stop the machine and see the shop technician. Do not use a dull blade.
6. Be extremely cautious of the exposed blade. Always push keeping your fingers to the sides of the blade, never directly in line with it. Make sure your fingers are clear at the end of the cut.
7. Avoid backing out of saw cuts. You could pull the blade off the wheel.
8. If the blade breaks, step back quickly, turn off the saw, report to the technician.
9. Clean up when finished.

BELT & DISK SANDER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Clean table and area around sanding machine before beginning work and when you are finished.
3. Be sure belt or disk is correctly mounted. The belt must track to the center of the drums. Do not operate machine if abrasive is torn.
4. Use table to control position of work as much as possible.
5. Small or irregular shaped pieces should be held in a clamp or special jig or fixture instead of fingers.
6. Sand only on the side of the disk that is moving Down towards the table. Move the work along the surface to prevent burns on the work.
7. If sanding belt or disc gets loaded with pitch, ask technician to clean it.
8. Sand only clean, new wood. Do not sand wood with excess glue or finish on surface. These materials clog and ruin abrasives.
9. Do not sand metal on sanders connected to dust collector.
10. Clean machine.
SPINDLE SANDER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear proper eye protection when operating spindle sander.
2. Never wear loose clothing or dangling jewelry when operating spindle sander and tie back long hair or secure under cap.
3. Check spindle diameter to see if it is appropriate for job at hand. If it needs to be changed, ask technician to change it. Do not attempt to change it yourself.
4. Before turning on sander, make sure table is clear and make any adjustments.
5. Make sure stock is firmly on table and not touching sanding drum. If sanding is to be done on the inside of the piece, be sure that is not touching and is held firmly before turning on sander.
6. Be careful not to let stock get caught between sanding drum and opening in table.
7. Be aware of the direction of rotation and feed material against rotation.
8. Sand lightly, do not use excessive force against sanding drum.
9. If sanding drum gets loaded with pitch, ask technician to clean it.
11. If something gets caught in the sander, turn sander off and get technician to remove it.
12. Be sure sanding drum comes to a complete stop before removing pieces.
13. Clean spindle sander when finished.

Portable Drill Safety

DO NOT use these drills unless you are authorized and have been instructed in its safe use and operation.

1. Always wear proper eye protection when operating portable power drill.
2. Never wear loose clothing or jewelry when operating portable power drill and tie long hair back or secure under a cap.
3. Use correct drill bit for the type of material to be drilled and task at hand.
4. Make all adjustments to the power drill with the switch off and the cord unplugged.
5. Ensure drill bit is sharp and clean.
6. Ensure the bit is properly seated and tightened in chuck.
7. Keep hands and fingers away from rotating drill chuck and drill bit.
8. Never stop rotation of drill chuck with your hands or fingers.
9. After inserting drill bit in chuck and tightening the bit, check rotation of bit to see that it runs true. If not, reset bit or replace it.
10. Center punch stock before drilling.
11. Do not use excessive force against stock being drilled. If the drill bit is not penetrating properly, turn drill off and replace bit.
12. When battery gets low, remove battery and place in charger. Turn off power drill before installing charged battery.
13. Secure stock to be drilled to workbench or saw horses. Do not hold stock with hands.
14. Ensure key is removed from chuck.
15. Do not overreach. Keep proper footing and balance at all times.
16. Lower pressure on power drill as drill bit breaks through material.
17. Remove, clean, and replace bit before storing power drill.
18. Clean work area when finished.

PNEUMATIC NAIL AND STAPLE GUN SAFETY

DO NOT use these tools unless you are authorized and have been instructed in their safe use and operation.

1. Always use approved safety glasses or goggles and hearing protection if needed. Secure all loose clothing, hair, and hanging jewelry.
2. These tools should be inspected and loaded before air is connected. Be sure there are no loose parts and the safety foot is operating correctly.
3. Be sure the proper length and type of fastener is properly loaded in the gun. If unsure, check with technician.
4. Treat the gun like it is a firearm, because it is just as dangerous. Never point it at anyone and always assume that it is loaded.
5. Always point the gun down when attaching the air hose.
6. Do not hold trigger unless you are ready to fire the gun.
7. Keep your free hand safely out of the way of the tool.
8. If the gun jams, get technician to clear it.
9. When changing fasteners, disconnect air first.
10. Always place gun on designated storage table during use. Do not lay it on work bench where it can be knocked off on the floor, where it can be damaged or can misfire.
11. If gun is not operating normally, or misfires, disconnect air and get technician to check it.
12. Do not fire fasteners too close to the edge of the material or at an angle where they can come out of the side.
13. Always assume that a fastener will penetrate clean through the work surface and hit whatever is on the other side, either they will have to move, or you will have to work in another area until they are gone. If you cannot resolve this, ask the technician for help.
14. After use, return gun to proper storage and coil hose on hook under bench.

PORTABLE SANDER SAFETY

DO NOT use these machines unless you are authorized and have been instructed in their safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection, and be sure to use appropriate dust collection system. Secure all loose fitting clothing, hair, and jewelry.
2. Inspect sanding media for loading and tears. Replace if necessary.
3. Be sure sanding media is properly mounted. Sanding belts must be centered on rollers. Sanding discs must be centered on pad and vacuum holes lined up. Pads on vibrating sanders must be properly attached.
4. If the sanding belt moves off center when it is turned on, it will need to be tracked back to center with the knob on the side of the sander. If it does not track properly, get the technician to adjust it.
5. Make sure sander’s switch is turned off before plugging in.
6. Use sanding station whenever possible to hold parts and collect dust.
7. When working on work benches, be sure work is secured in vise or clamped securely to table. Use portable dust collector to catch as much dust as possible.
8. Be sure sander is at full operating speed before applying to wood surface.
9. Sand with the grain as much as possible.
10. Do not set sander on edge of work table where it can be knocked off and damaged.
11. Return sander to proper storage when finished.
12. Clean work area.
CIRCULAR SAW SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles and hearing protection if needed. Secure all loose clothing, hair, and hanging jewelry.
2. Unplug saw or remove battery before inspecting or adjusting saw.
3. Check that the saw has the proper blade and is sharp before cutting. Have technician change blade if needed.
4. Check that the lower blade guard retracts and returns freely without binding. Clean sawdust out of guard if it is binding.
5. Adjust blade so that it only extends 1/8 inch beneath the wood and lock it in place.
6. Secure the material to sawhorses or workbench to avoid movement. Be sure that the blade will not come in contact with the workbench.
7. Attach a straight-edge to the material whenever possible to ensure straight cuts.
8. Stand to the side when cutting material to position yourself away from potential kickback. Use a comfortable, balanced stance and never over-extend yourself.
9. Hold the saw with two hands. One hand on the handle with the switch and the other on the handle at the front of the saw.
10. Allow the saw to reach full operating speed before starting cut.
11. Do not force the saw during the cut.
12. Do not twist the saw and cause it to get in a bind.
13. After the cut, be sure the blade has come to a complete stop and that the lower blade guard is fully retracted before setting saw down.
14. Unplug saw or remove battery and clean saw. Return saw to storage and clean area.
DRUM THICKNESS SANDER SAFETY

DO NOT OPERATE THIS MACHINE UNLESS YOU ARE AUTHORIZED AND HAVE BEEN INSTRUCTED IN ITS SAFE USE AND OPERATION.

1. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Always open hood over drum to check drum for loose or damaged sanding strips and excessive loading. Have Shop Technician make changes or adjustments to machine.
3. Stock to be sanded must be at least 8 inches long and maximum of 24 inches wide. Two people are required to sand long pieces. One person on the infeed side and one on the outfeed side.
4. Place the stock on the table under the sanding drum and raise it until the drum just touches the stock. Turn the conveyor feed on to remove the stock.
5. Close hood and turn the drum on. Wait for dust collector to come on, then turn the conveyor on at a low rate.
6. Feed stock through, then raise table in small increments (¼ turn maximum) until desired thickness is achieved.
7. A combination of variables will determine the proper depth of cut to use. Abrasive type and grit size, width of work piece, hardness of wood, conveyor feed rate. A proper cut is achieved by balancing the depth of cut with the feed rate, keeping in mind the qualities of the material being sanded. Softer wood can be sanded faster than hard wood of the same thickness. Wider pieces require more power to sand properly.
8. When feeding stock into the machine, keep your hands clear of the conveyor belt. Hold the material onto the infeed side of the conveyor and hold on to it until the feed roller begins to pull it in. When the drum contacts the stock, remove your hands and let the material pass through the machine. When operating the machine by yourself, move to the other side to remove the stock as it comes out. Do not reach over the machine to remove pieces.
9. If machine bogs down and begins to stall, turn off conveyor and drum. Get technician to clear the machine and readjust it.
10. When sanding is complete, turn off conveyor and drum. When machined has come to a complete stop clean machine with shop vac.

JOINTER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure the dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Before turning on the machine, make adjustments for depth cut and positioning of the fence.
3. Do not adjust the outfeed table or remove the guard without your technician’s approval.
4. The maximum cut for jointing an edge is 1/8” and for flat surface (face) it is 1/16”.
5. Stock must be at least 12” long and at least 3/8” thick unless a special feather board is used.
6. Feed the work so the knives will cut “with the grain.”
7. DO NOT PLANE END GRAIN!!!
8. Inspect the wood before sending through the jointer. Use only new stock that is free of knots, splits, cracks, and fasteners.
9. Keep your hands away from the cutterhead even though the guard is in position. Maintain at least a 6” margin of safety!!!
10. Use a push stick or push block when planning a flat surface (face).
11. Do not apply pressure directly over the knives with your hand.
12. The jointer knives must be sharp. Dull knives will vibrate the stock and may cause kickbacks.
13. Clean the machine.

THICKNESS PLANER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, hearing protection if needed, and be sure the dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Adjust the machine to the correct thickness of the cut before turning on the power.
3. NEVER plane more than 1/8” of wood at a time.
4. Stock should be at least 12” long, if you’re not sure, contact a technician.
5. Plane with the grain. NEVER attempt to plane across the grain.
6. Surface only new dry lumber that is free of loose knots and serious defects.
7. Stand to one side of the work being fed through the machine.
8. DO NOT LOOK into the throat of the planer while it’s running.
9. Handle and hold stock only in the area beyond the ends of the table.
10. If the machine is not working or sounding proper, shut off the power at once and inform a technician.
11. If need be, an operator can work with a partner to help catch the work on the outfeed table.
12. Clean the machine.
WOOD LATHE SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always use approved safety glasses or goggles with full face shield, hearing protection if needed, and be sure dust collector is on. Secure all loose clothing, hair, and hanging jewelry.
2. Rough cut the workpiece as close as possible to the finished shape before installing it on the lathe.
3. Examine the workpiece for flaws and test the glue joints. Do not mount a split workpiece or one containing large knots.
4. Securely fasten the workpiece to the faceplate prior to mounting on the lathe. Use the largest faceplate possible to support the workpiece. Do not allow the screw fastners to interfere with the turning tool at the finished dimension of the workpiece.
5. Always drive the spur center into the workpiece with a soft mallet prior to installing it in the lathe headstock.
6. Snug the tailstock center against the workpiece and lock it securely.
7. Adjust the tool rest height in relation to the tool being used and as close to the workpiece as possible. Tighten all clamping handles.
8. Rotate the workpiece by hand to check for clearance and examine the set-up carefully before turning the machine on.
9. Stand clear and make sure all observers are clear before turning the machine on
10. Use the lowest speed when starting a new workpiece. Never exceed recommended work speeds.
11. Never adjust the tool rest while the workpiece is turning.
12. Always keep your hands behind the the plane of the tool rest. Always keep the tool firmly against the tool rest with both hands on the tool.
13. Move the cutting tool slowly into the workpiece and take small cuts when roughing.
14. Remove the tool rest when sanding or polishing. When finishing, use only paper towels, never woven fabric. Apply finish or sand to the underside of the exterior of the workpiece and to the lower left-hand quadrant with the wood spinning counterclockwise. Hold strips of sandpaper with ends in each hand.
15. Do not lay tools on lathe bed.
16. Clean machine and put away all tools.
HOLLOW CHISEL MORTISER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles. Secure all loose fitting clothing, hair and jewelry.
2. Technician will install proper chisel and bit and adjust the clearance.
3. Set depth stop high enough so that the chisel will not hit the table.
4. Make sure the work piece is securely attached or clamped to the table. Never use your hand to hold the work piece.
5. Keep your hands at least 5 inches from the chisel while operating the machine.
6. Maintain a balanced stance at all times so you do not fall into the moving parts of the machine.
7. Do not use excessive force to perform the machine operation.
8. Don’t cut a 3 sided hole. Cut the first hole, skip past the material 2/3 the size of the hole, and drill again. Continue in this manner until the required hole length is achieved, then clean up the material between the holes.
9. When drilling is complete, have the technician remove the bit.
10. Clean up the machine.
PEDESTAL GRINDER SAFETY

DO NOT use this machine unless you are authorized and have been instructed in its safe use and operation.

1. Always wear approved safety glasses or goggles, and hearing protection if needed. Secure all loose clothing, hair, and hanging jewelry.
2. Ensure all guards are in place before operating grinding machine.
3. Rotate wheel to check for chips or cracks. If there is metal imbedded in wheel, get technician to change wheel. The pedestal grinder is only to be used for grinding steel.
4. The tool rest clearance between rest and wheel is 1/8 inch maximum. The spark arrestor clearance is 1/4 inch maximum. Make all adjustments with machine turned off and unplugged.
5. Stand to the side of the wheel and make sure no one else is in front of the grinder before turning it on. Allow the grinder to operate at full speed for one minute before operating the grinder.
6. If there is vibration, turn off grinder and get technician. If wheel needs dressing, technician will do that.
7. Bring stock in contact with the grinding wheel slowly and smoothly without bumping. Move stock from side to side to get uniform wear on wheel and prevent grooving the wheel. Use light pressure and cool stock when it gets hot to prevent being burned.
8. Do not grind small pieces that can be pulled out of your fingers and get caught in machine.
9. Do not grind on the side of the wheel.
10. Turn off machine and wait until the wheel comes to a complete stop before leaving the machine.
11. Clean the machine.
VERTICAL MILLING MACHINE

DO NOT use this machine unless you are authorized or have been instructed in its safe use and operation.

1. Always wear eye protection.
2. Correct dress is important, remove rings and watches, and roll sleeves above elbows.
3. Always stop the machine before making adjustments.
4. Handle sharp cutters, centers, and drills with care.
5. Remove chuck keys and wrenches before operating.
6. Know where the emergency stop is located before operating the machine.
7. Use pliers or a brush to remove chips and swarf, never your hands!
8. Ensure all guards and shields are in place.
9. Use correct tool for the job.
10. Always use sharp milling bits and cutting fluids where possible to reduce friction and cutting forces.
11. Clamp work piece securely in vice and/or to table.
12. Use the correct cutting speed for milling bit size and material.
13. Make sure you clean up the work area once you are finished using the machine.
14. Place all tools used back where they belong.

METAL LATHE SAFETY

DO NOT use this machine unless you are authorized or have been instructed in its safe use and operation.

1. Always wear eye protection.
2. Correct dress is important, remove rings and watches, and roll sleeves above elbows.
3. Always stop the machine before making adjustments.
4. Do not change spindle speeds until the lathe comes to a complete stop.
5. Handle sharp cutters, centers, and drills with care.
6. Remove chuck keys and wrenches before operating.
7. Handle heavy chucks with care and protect the lathe ways with a block of wood when installing a chuck.
8. Clamp work securely in chuck with minimum overhang.
9. Use correct spindle speed & feed rate for material.
10. Know where the emergency stop is before operating the lathe.
11. Use pliers or a brush to remove chips, swarf, never your hands!
12. Never lay tools directly on the lathe ways. If a separate table is not available, use a wide board with a cleat on each side to lay on the ways.
13. Keep tools overhang as short as possible.
14. Never attempt to measure work while the machine is running.
15. Never file lathe work unless the file has a handle.
16. File left-handed if possible.
17. Protect the lathe ways when grinding or filing.
18. Use two hands when sanding the work piece. Do not wrap sand paper or emory cloth around the work piece.
19. Clean the machine & work area after use.
20. Clean tools and put them away where they belong.