

# YSU ART DEPARTMENT WOODSHOP QUICK REFERENCE GUIDE

## WOODSHOP SAFETY DRESS CODE:

### REQUIRED TO WORK:

- Safety Glasses
- Close-toed Shoes
- Long hair tied back
- No Loose Jewelry
- Loose Clothing must be Tucked In

### SUGGESTED TO WORK:

- Ear protection
- Dust Mask
- Long Pants
- Steel Toe or Composite Toe Boots
- Cotton or Natural Fiber Clothing

## WOODSHOP MATERIAL USE RULES:

### ACCEPTABLE MATERIALS FOR SHOP USE:

- Dry, New Wood: NO PAINT, NAILS, STAPLES, OR SCREWS
- Masonite
- MDF
- Melamine
- Cardboard
- Plexi Glass (*for some operations: SEE TECH*)
- High Density Foam (*for some operations: SEE TECH*)

### UNACCEPTABLE MATERIALS FOR SHOP USE:

- Painted Wood
- Pressure Treated Wood (*has green tint when new*)
- Reclaimed Wood with nails, staples, or screws
- Plaster
- Clay
- Glass
- Metal
- Fiber Glass or Fiber Glass Resin

## Wood Shop General Rules

*The wood shop is a facility offered by the YSU Department of Art to be used by enrolled students, Faculty, and Staff. It is considered a privilege to use the shop and is expected that it will be used in accordance with all safety rules and restrictions as determined by YSU Art. Any willful misuse of the shop or deviation from the safety rules will result in suspension of the student's shop privileges.*

**In case of Emergency- CALL 911.**

### General Safety

1. All persons must wear safety glasses upon entering the wood shop. Ideally you would purchase your own, but we do have some available for general use.
2. Working with wood is dusty. If you are going to need a mask for multiple days, please purchase one and re-use it. In the event the shop provides one, **Do not return a used mask to the box!**
3. Protect your hearing! Ear Muffs are provided in the tool room.
4. Appropriate attire must be worn to work in the wood shop. No jewelry or baggy clothes may be worn when working with power tools. Long hair must be tied back. No open toed shoes or high heels. **ABSOLUTELY NO FLIP FLOPS!**
5. No student is allowed to work with power tools while alone in the shop.
6. No one is permitted to remove a safety guard from any tool.
7. Never speak to anyone using a power tool. Wait until they are done.
8. If you find any tool in need of repair, turn it off immediately and tell the Shop Monitor/ Instructor/Tech. Under no circumstances make repairs to the equipment yourself. Please note that broken tools may take up to two weeks to get back online.
9. Shop users are responsible for immediately cleaning up their work area and the tools when done. This must be done before another person uses the area. Brooms, hand brooms, a Shop-Vac, dustpans, and an air hose are provided. Failure to clean up can result in suspension from the shop.
10. Wood and supplies must not be stored in the shop.
11. Only new lumber may be used in the shop. Any recycled or found materials must be inspected by Shop staff before being machined.
12. Nothing wet is to be placed on any of the tools. No Cans, towels, food, etc.
13. No other material, like metal, plastic, foam, or plaster is to be used in the wood shop without permission of the Shop Monitor.
14. **No open flame in the wood shop.**
15. Immediately report any and all accidents or incidents to the Shop Monitor, no matter how small.

***If you are unsure of how to do something ask the Shop Monitor.***

The Studio Support Specialist and Department of Art make the final decision on how this shop and equipment will be used.

## Wood Shop Safety

### TOOLS & MACHINERY:

**ALWAYS TURN ON THE DUST COLLECTION BEFORE USING WOOD SHOP MACHINERY!!! Located on left side of room.**

### MITER SAW

1. MAINTAIN A SIX-INCH MARGIN OF SAFETY FROM THE BLADE. This means that you must keep your hands six inches away from the path of the saw blade.
2. Wear safety glasses. Highly recommend ear muffs.
3. Keep the blade guard in position at all times.
4. HOLD STOCK FIRMLY ON THE TABLE AND FLUSH AGAINST THE BACK FENCE.
5. After making the cut, make sure that the blade has come to a complete stop before raising the saw.
6. When making multiple cuts of various angles do not move hands under the blade whether it is moving or not.
7. This is a sliding miter saw – for cuts over 6 inches in width - bring the saw forward as far as necessary, cut down to bottom of stock, and then push to cut through width of material. Do not cut down first and then try pulling the blade towards you!
8. Sweep the workstation and the floor. All scrap goes in the scrap bin.



### TABLE SAW

1. Safety glasses required for this tool.
2. Turn on the dust extractor before turning on the table saw.
3. The saw is SAWSTOP. This means that if you touch the blade (or the wood is wet/treated/painted/has hardware in it) it will trigger a brake to immediately stop the saw and prevent injury. This does not mean that you should not practice safe procedures when using it, as machines can malfunction. If the brake is triggered, the saw cannot be restarted until a new brake and blade are installed on the machine (at a cost of ~\$150.00). If you trigger the brake, notify the instructor, shop monitor, or Technician immediately.
4. Be certain that the blade is sharp and that it is the right blade for your work.



5. Set the blade so that it extends no more than 1/4-inch above the stock to be cut.
6. Attach either the riving knife or splitter with guard before making cuts. This helps prevent material from binding on the blade.
7. Stand to one side of the operation blade. Do not reach across it.
8. Make sure that the stock is fully past the blade before turning the saw off.
9. MAINTAIN A SIX-INCH MARGIN OF SAFETY FROM THE BLADE. A variety of push sticks are provided and must be used when cutting closer than six inches.
10. Rough stock must be surfaced and at least one side jointed before being cut on the table saw.
11. NEVER CUT STOCK FREE HAND WITHOUT ASSISTANCE FROM THE FENCE!
12. Use only new stock that is free of knots, splits and warp. Do not cut stock that has nails, screws, etc. in it. If you hit the hardware when cutting through the material, it will trigger the SawStop brake and it is rather expensive to replace the brake and blade.
13. Do not let small scrap cuttings accumulate around the saw blade. Use a push stick to push them away after turning the saw off.
14. Students helping to “catch” stock from the saw should not push or pull the stock. They should support it as necessary. The operator must control the feed and direction of the cut.
15. Cross cutting on the table saw is dangerous. Cross cuts can be made on the miter or panel saw depending on size.
16. As you complete your work, turn off the saw and remain until the blade has stopped.
17. Clear the saw of dust and waste. Return the saw blade to zero settings. SWEEP THE WORK AREA!

## **SCROLL SAW**

1. Safety glasses required.
2. Lower the material hold-down clamp as close to the wood as possible. This will prevent the wood from bouncing on the table.
3. Use only flat-bottomed wood unless otherwise approved.
4. Feed the saw only as fast as the teeth will remove the wood easily.
5. Hands should always be at least four inches away from the blade when the saw is running. Use a push stick for any operations that your fingers would be closer to the blade.
6. Don't reach under the table to make adjustments when saw is running.



7. Make sure the blade is at full stop and machine turned off before removing any cover.
8. Plan cuts to avoid backing out of curves, whenever possible. Stop the machine before backing out of a long, curved cut. **USE RELIEF CUTS WHEN NECESSARY!**
9. When working with small pieces of wood, glue the piece to a piece of cardboard to allow you to cut it without getting excessively close to the blade (for very small piece a handsaw might work better). Only use as much glue as necessary as it can gum up blades.
10. Make sure the machine is fully off before changing the blade. Install the blade with the teeth facing down.

### **DRILL PRESS**

1. Wear safety glasses.
2. Secure work properly.
3. Never stand on tool.
4. Do not wear gloves or loose clothing.
5. Never start the drill press with the drill bit or cutting tool in contact with the work piece.
6. Do not attempt to drill material that does not have a flat surface. No round stock.
7. Stop the drill press before removing scrap pieces from the worktable.
8. Clean the tool and the work area when done.



### **BELT AND DISK SANDER**

1. Wear safety glasses. Dust mask recommended.
  2. Do not use worn out or loaded up disks or belts. There is a rubber sanding belt cleaner next to the sander to use on loaded up sanding surfaces. Use of the cleaner will make the sanding surfaces last longer.
  3. Always hold work securely and against the table when possible.
  4. Move your work across the surface of the abrasive.
- DO NOT sand in one place- this clogs, burns, and ruins the abrasive surface.
5. The sanding belt should track in the middle of the plate. Do not use the machine if the belt is rolling off one side of the other. Report any tears or holes or flaws to the Monitor. Do not attempt to re-adjust the machine yourself.
  6. Clean up when done.



## **SPINDLE SANDER**

1. Wear safety glasses. Dust mask recommended.
2. Do not use worn out or loaded up disks or belts. There is a rubber sanding belt cleaner next to the sander to use on loaded up sanding surfaces. Use of the cleaner will make the sanding surfaces last longer.
3. Always hold work securely and against the table when possible.
4. Use the largest spindle possible for the radius being sanded. Using a smaller spindle makes it more difficult to get a smooth curve and results in excessive abrasive wear.
5. Hand Tighten spindles or they can get stuck.
6. Feed against the direction of the spindle.
7. Avoid using excessive pressure- this clogs, burns, and ruins the abrasive surface.
8. Report any tears or holes or flaws to the Monitor. Do not attempt to re- adjust the machine yourself.
9. Clean up when done.



## **BAND SAW**

1. Wheel guard doors must be closed before turning on the machine
2. Adjust the upper guide assembly so it is no more than 1/4" above the work.
3. Allow the saw to reach full speed before starting to feed the work.
4. The stock must be held flat on the table.
5. Feed the saw only as fast as the teeth will remove the wood easily.
6. Hands should always be at least four inches away from the blade when the saw is running.
7. Plan cuts to avoid backing out of curves, whenever possible. Stop the machine before backing out of a long, curved cut. **USE RELIEF CUTS WHEN NECESSARY!**
8. Make turns carefully and do not cut radii so small that the blade is twisted then broken.
9. Round stock should not be cut unless mounted firmly in a jig.
10. Do not let small pieces of wood accumulate around the blade. Move them out of the way with a push stick or turn off the saw, wait till the blade stops, and then clear the table.



11. If you hear a clicking noise, turn off the machine at once. This sound indicates a crack in the blade. If the blade breaks, shut off the power and move away from the machine until both wheels stop. Notify the shop monitor.
12. Turn off the machine as soon as you finish working. Sweep the table and the floor. All scrap in the scrap bin.

## **BRAD NAILER**

1. You must wear safety glasses when using this tool. Stray nails can fly through the air at a very high rate of speed.
2. Disconnect tool from air hose before clearing a jammed fastener.
3. Connect tool to air supply before loading fasteners. Always assume that the tool contains fasteners.
4. Never point the tool at yourself or anyone else.
5. Remove finger from trigger when not driving fasteners. Never carry a tool with your finger on the trigger.
6. Do not drive fasteners on top of other fasteners or drive fasteners at too steep of an angle.
7. Keep hands and fingers away from the nailing area. You could nail through the material and into your finger.
8. Do not fasten too close to the edge of the material. The material could split and the fastener could fly free or ricochet, causing personal injury to you or someone in the work area.
9. When done return to the tool room, roll up air hose, and shut off the valves for the air.



## **HAND TOOLS**

1. Safety glasses required.
2. When using the carving chisels DO NOT FORCE THEM, do not hog out too much wood, approach knots with caution. Take care of the mallet when striking the chisels. DO NOT DROP THE CHISELS.
3. Secure stock when working. If you don't know how, ASK!
4. Put them back in their proper place.
5. When cutting with a knife or razor, cut away from yourself.
6. If the tool is broken or compromised please tell the Shop Monitor.
7. Do not drill yourself, stab yourself, or hit yourself. If you get something in your eye wash it out

## **DIE GRINDER/Dremel**

1. Do not wear jewelry or loose clothing. Keep hair away from tool.
2. Use accessories that are rated for the Die Grinder/Dremel only.
3. Keep hands clear of spindle and tool end.
4. Use both hands to hold tool
5. Be aware of excess hose on the floor, tripping is a hazard.
6. Clean tool and work area when done.



## **4" ANGLE GRINDER**

1. Wear a face shield and safety glasses. A face shield is not a substitute for safety glasses.
  2. When using the tool for sanding move the tool around the stock, do not leave it in one place.
  3. Do not grind metal in the wood shop!
  4. Never remove the guard. It can be rotated for optimum positioning.
  5. Always use the auxiliary handle for maximum control over torque reaction and kickback.
  6. Secure the work properly on the workbench. Adjust your work to a comfortable height.
- There is a portable step to stand on if you need to be higher. IF YOU DON'T KNOW HOW TO SECURE YOUR WORK—ASK!
7. Grip the tool with both hands at all times.
  8. No loose clothing.
  9. Be very aware of people around you, ask them to give you space if you need it.
  10. Blow off the tool, put it away and sweep the work area.



## **JIG SAW**

1. Safety Goggles required. Dust mask recommended.
2. Secure material to a table with clamps, leaving enough room to make cuts without cutting into the table.
3. Check that blade is securely fastened before plugging in. Do not use a bent blade.
4. Keep base of tool flat on surface of material when cutting.
5. Do not attend to cut anything more than 3 inches thick.



6. Make relief cuts as necessary.
7. Slow down when reaching the edge of the material. Keep feet out of the way of any falling material.

## **ROUTER**

1. Wear safety glasses. Dust Mask and hearing protection highly recommended
2. Fully Secure your material to be routed to the work table with clamps etc.
3. Always unplug the Router before changing bits. Find the appropriate wrench (or wrenches) for removing or tightening router bits. Some of the small routers only require one wrench, but you must also press the “lock” button to keep the spindle from spinning. Do not push Router bits all the way to the bottom of the tool, move them back ~1/8 of an inch then tighten.
4. Always hold the Router tightly and with Two Hands!
5. Move from LEFT TO RIGHT! This direction allows the bit to cut properly, moving the other direction can be dangerous and less effective.
6. DO NOT FORCE THE ROUTER to move quicker than the cutting action allows! If the Router is cutting really slow, then either the bit is dull, or you are cutting thicker material than the bit or router is rated for.
7. Turn off the Router IMMEDIATELY after you are done cutting. Do Not set it down until the bit has stopped moving.
8. Clean tool and work area when done.



## **CIRCULAR SAW**

9. Wear safety glasses.
10. Cut down full sheets of plywood on the panel saw.
11. Check to see that blade guard is working properly.
12. Set blade depth 1/4" below material you are cutting.
13. Arrange the material so that the saw will not bind as you are cutting the material.
14. Unplug cord before changing the blade or working on the tool.
15. Clean tool and work area when done.



## PANEL SAW

1. Cut down full sheets of plywood on the panel saw.
2. When cross cutting stock let the saw blade come to a full stop before raising it up for the next cut. When cross cutting, cut from the top only.
3. Do not drop plywood on guide wheels, this might throw them out of alignment.
4. Support large sheets of plywood properly.
5. Clean tool and work area when done.



## JOINTER

1. Be sure that you have the Shop Supervisors approval to operate this machine. If you are familiar with jointer operation but have never used the jointer in the wood shop you still need a demonstration from the Shop Supervisor/Monitor.
2. Safety glasses and face shield required when using this machine.
3. Before turning on the machine, make adjustments for depth of cut and position of fence.
4. Do not remove the guard. Do not adjust the out feed table without Shop Coordinator's permission.
5. Maximum cut depth for jointing an edge is 1/16th".
6. Stock must be at least 12 inches long.
7. Feed the work so that the knives will cut "with the grain". Use only new stock that is free of knots, splits and checks.
8. Keep your hands away from the cutterhead, even though the guard is in position. **MAINTAIN AT LEAST A SIX-INCH MARGIN OF SAFETY.** (This means that the hands should always be at least six inches from the cutterhead.)
9. Use a push block when planing a flat surface. Never apply pressure directly over the knives with your hand.
10. Do not plane end grain.
11. The jointer knives must be sharp. Dull knives will vibrate the stock and may cause a kickback.
12. Material cannot be less than 1/4 inch thick.
13. Clean tool and work area when done.



## PLANER

1. You must have permission of the Shop Supervisor to use the planer.
2. New wood only in the planer.
3. The Shop Monitor must inspect all wood before using the Thickness Planer. Under no circumstances can recycled material be used.
4. Do not plane the maximum amount off of stock when planing. Two passes through the planer can be better than one. Be aware that some woods are harder than the others are; hard woods will need more passes through the planer.
5. Keep hands and fingers away from cutter head when machine is running.
6. When planing thin pieces of wood, be sure to stand to one side in case the wood breaks and kicks back.
7. Plane near the door or outside to make the cleanup easier.
8. Check planer table before turning it on, a tool might have slipped under the cutter head.
9. Make all adjustments with the power off.
10. Support the work properly at the in feed and at the out feed.
11. Do not perform planing operations on material shorter than 10", narrower than 3/4" wider than 12 1/2", or thinner than 3/16"
12. Clean tool and work area when done



## LATHE

1. Must have Shop Supervisor's approval to operate this machine. If you are familiar with lathe operation but have never used the lathe in the wood shop you still need a demonstration from the Shop Supervisor/Monitor.
2. Before starting the machine, be sure that spindle work has the cup center properly imbedded, tail stock and tool rest are securely clamped and there is proper clearance for the rotating stock.
3. Before starting the machine for faceplate work, disengage the spindle lock and check to see that the faceplate is tight against the spindle shoulder and the tool support has proper clearance.
4. Wear safety glasses and a face shield to protect your eyes and face, especially when roughing out work.
5. Select turning speed carefully. Large diameters must be turned at the lowest speed. Always use the lowest speed to rough out work.
6. Wood with knots and splits should not be turned. Glued up stock should cure at least 24 hours.



7. Keep the tool rest close to the work.
8. Remove the tool rest for sanding and polishing operations.
9. Use a scraping cut for all face plate work.
10. Remove both the spur and cup centers when they are not in use.
11. When you stop the lathe to check your work also check and lubricate the cup center.
12. Keep the lathe tools sharp; hold them firmly and in the proper position.
13. Keep your sleeves rolled up and other loose clothing away from the moving parts of the lathe and work.
14. Clean up debris and dust.