

# College/Viterbi School (VSoE) Graduate Student Machine Shop Safety Guidelines and Training Confirmation

## General Safety and Other Policies

- Safety glasses shall be worn at all times in the Graduate Student Machine Shop.
- No open toed shoes, flip-flops, or sandals shall be worn.
- No machinery to be operated without prior completion of College/VSoE training program.
- Never operate any machinery when tired.
- No loose clothing or jewelry permitted when operating a machine. Tuck in shirts, button up or roll up shirt sleeves
- Confine long hair with a cap or hair net or restrained it in some way to avoid the possibility of being entangled in machinery.
- Wearing an "iPod" or other device that interferes with hearing is not allowed
- Only the operator is allowed to turn on a machine.
- Always shut off a machine after making your cut. Never leave a machine while it is running.
- Do not bypass any machine guard when operating a machine.
- Cleanliness must be observed to avoid creating a safety hazard. This includes cleaning up spills, food on the ground, small round objects or saw dust on the floor, leaving sharp objects where someone might get cut, etc. It is expected that users will clean up after themselves each time they use the shop.
- All machine adjustments and cleaning is to be done with the machine off.
- Students are expected to demonstrate mature judgment and common sense in their work and conduct while working in the machine shop
- Working alone in the machine shop is strongly discouraged. The "buddy-system" is strongly encouraged. If you bring a buddy who has not been cleared to use the equipment, it is your responsibility to ensure the person does not do any work in the shop.
- All accidents, no matter how minor, should be reported to Don Wiggins and Kan Lee immediately.
- **Failure to follow above policies will result in loss of access to use the shop.**

## **Training**

During your training you will be instructed in the techniques of measuring and machining as well as the proper use, care and applications of the following standard Machine Shop tools: Lathe, Bridgeport Mill, Tree Mill, Band Saw, Drill Press and Grinder.

### **Lathe Use and Safety**

1. When changing chuck, place a board on the ways to prevent damage to machine and possibly to yourself if chuck should fall.
2. Never wear gloves, leave chuck wrench in chuck, adjust cutting tool or feel the edge of the work piece, when the lathe is running.
3. Stop lathe before cleaning, oiling, changing tools or taking measurements.
4. Do not use a hacksaw on a revolving part.
5. Never try to stop a spinning chuck or faceplate with your hands.
6. File left-handed when using a lathe.
7. Do not handle chips with your bare hands.

### **Milling Machine Use and Safety**

1. Make sure that cutter and work-piece are secure.
2. Do not touch the cutter with your hand when it is running.
3. When setting up a job, move a table as far away as possible from the cutter to avoid injury to your hands.

### **Band Saw Use and Safety**

1. Never touch the blade while the machine is running.
2. Lower blade guide-guard so that it is close to the top of your part.
3. Never cut a round part (or any shape that is prone to rotate) unless it is clamped in a vise.
4. Keep hands and fingers away from the blade. Use a piece of wood to push a part through the blade.
5. Never back out of a cut. If it does become necessary to back out of a cut, turn the band saw off, wait until it comes to a complete stop, and then slowly back the stock out.
6. Use only sharp blades. Never apply pressure to make a cut. If a blade breaks, step back and shut the machine off. Have an instructor change a broken or dull blade.
7. Shut the machine off when you finish your cut. Never leave the machine with the blade running.

## **Drill Press Use and Safety**

1. Only use a sharp drill bit. Never touch the drill bit when it is turning.
2. Secure all work pieces with a clamp or in a vise clamped to the table. Never attempt to stop a revolving piece of work in the drill press by hand. Turn off the machine. Do not lift the quill handle. Wait until the piece comes to a complete stop before trying to handle it.
3. Remove chuck key before turning on motor.
4. Drill only at a proper speed; forcing a drill or drilling too fast may result in breakage and injury.
5. Remove chuck wrench from the drill chuck before turning on drill press.
6. If work should slip from the clamp, never attempt to stop it with your hands; stop the machine and make adjustments.
7. If drill stops in the work, shut off motor and free drill by hand.
8. When drilling deep holes, use interrupted feed to break up chip.
9. Ease up on feed pressure when breaking through work piece.
10. Again, do not handle chips!

## **Grinder Use and Safety**

1. Always use safety shields or goggles even if the grinder is equipped with a protective glass shield.
2. Make certain the tool rest is not more 1/8" away from the face of the wheel. Stop grinder when adjusting tool rest.
3. Stand to one side, out of the line of the wheel, when starting up the grinder.
4. The face of the wheel must be flat and free of grooves.
5. Use only the face of wheel for grinding.
6. Hold the work firmly so that it will not slip out of your hand and feed it slowly and gradually into the wheel.
7. Never use grinding wheel to grind soft metals. (Aluminum, brass, copper, etc.)

