VCSU SAFE OPERATING PROCEDURES:
Hand Tools/ Power Tools

Hand Tools
Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools results from misuse and improper maintenance.

Safe Operating Procedure
When using hand tools, the following apply:

- Use proper eye protection (safety glasses, goggles or face shield).
- Use the right tool to complete a job safely and efficiently.
- Before using a tool, be sure in is in clean and good condition.
- Make sure saw blades, knives, or other tools are directed away from aisle areas and other employees working in close proximity.
- When using knives, always cut away from your body.
- Keep knives and scissors sharp; dull tools can be more hazardous than sharp ones.
- Around flammable substances, use spark-resistant tools made from brass, plastic, aluminum, or wood.
- Replace or repair all wooden handles that are loose, splintered, or cracked.
- Do not use impact tools such as chisels, wedges, or drift pins that have mushroomed heads.
- Do not lay tools down at the edge of a work bench. Do not lay tools where they could roll off, where someone could bump or trip over them.
- When you are finished with the tool, return it to its assigned area. Do not leave tools lying around.
- Only use a tool if you know how to use it properly. If you are unsure, check with a supervisor.
- Report any tools that are defective or in unsatisfactory condition to your supervisor.

Power Tools
Power tools can be extremely dangerous if they are used improperly. Common accidents associated with power tools include abrasions, cuts, lacerations, amputations, burns, electrocution, and broken bones.

When working around power tools, you must wear the necessary personal protective equipment (PPE) and avoid wearing loose clothing or jewelry that could catch in moving machinery. In addition to the general shop guidelines, the following apply when working with power tools:

- Operate power tools only if you are trained and familiar with the tool.
- Inspect all power tools and cords before using them. They should be clean and in good condition. Do not use a tool if the cord is damaged or loose.
- Make sure the work area is well lit- do not use the power tool if you cannot see the work area clearly.
- Make sure the tool is off before plugging it into a power source.
- Do not distract or disturb a co-worker who is using a power tool.
- Ensure that cords and hose are not posing a tripping hazard.
- Do not use power tools near areas of water.

Power Carpenter Tools
There are three types of carpenter power tools: electrical, pneumatic and hydraulic.

- See ‘VCSU SAFE OPERATING PROCEDURES: Shop Safety’ for additional information.

Air Compressors

- Only trained personnel should use an air compressor.
- Before each use, check the compressed air system and electrical components for signs of damage, deterioration, weakness and leaks. Repair or replace and defective parts.
- Never weld or drill holes in the air tank.
- Release air slowly when draining moisture or depressurizing the compressor system.
- Keep fingers away from a running compressor, fast moving and hot part could cause injury.
- Ensure all belt and pulley systems are operating properly and properly guarded.
- Never use an air compressor for the purpose of supplying breathing air.
- Never operate or repair in or near flammable gas or vapor.
- Never stand on or use the unit as a handheld.
- Disconnect power and release all pressure from the system before performing any maintenance work on the machine.
- Do not use extension cords with an air compressor.
- Do not exceed pressure limits for any component in the system.

**Table Saw**

- Always keep the blade guard and driving knife in place and in working order. Keep tools and cords in good repair and clean for better and safe performance.
- Keep work area clean and well lit.
- Disconnect tools when not in use and before performing any maintenance work.
- Avoid accidental starting; be sure switch is “OFF: when plugging in.
- Keep hands away from cutting area. Never touch the blade or other moving parts during use.
- Never leave tool running unattended.
- Avoid cutting nails and screws.
- Never start a tool when its rotating parts are in contact with the piece being worked on.
- Always secure work.
- Never stand or have any part of your body in line with the path of the saw blade. Do not reach over any moving parts.
- Never attempt to free a stalled saw blade without first turning the saw off and disconnecting from the power source.
- Avoid kickbacks by:
  - Keeping the blade sharp.
  - Keeping rip fence parallel to the saw blade.
  - Keeping riving knife, anti-kickback pawls and blade guard in place and operating.
  - Not releasing the work before it is pushed all the way past the saw blade.

**Chainsaw**

- Only trained and authorized personnel should be permitted to operate the designated equipment. (Student Employees are NOT permitted to operate chain saws).
- Personal Protective Equipment is **REQUIRED** and includes:
  - Safety Goggles
  - Boots/Steel toe shoes
  - Snug fitting clothes
  - Hearing protection
  - Gloves
- Keep bystanders and animals out of work area
- Do not operate the unit when you are fatigued, ill or if you are under the influence of alcohol, drugs or medication.
- Do not operate a chain saw that is damaged, improperly adjusted or not completely and securely assembled.
- Do not start cutting until you have a clear work area, secure footing and a planned escape route.
- Prior to starting the engine, ensure that the nose of the saw is free of contact with other objects.
- Keep the handles dry, clean and free of oil.
- Operate the chain saw only in well-ventilated areas.
- Keep all parts of your body away from the saw chain when the engine is running.
• Carry the chain saw with the engine stopped, the guide bar and chain to the rear with the muffler away from your body. Use the appropriate guide bar safety cover.
• Shut off the engine before setting the chain saw down.
• Use caution when cutting small size brush- smaller material may catch the chain and pull you off balance.
• When cutting a limb that is under tension, be alert for spring back.
• Do not operate a chain saw in a tree unless you have been specifically trained to do so.
• All chain saw service should be performed by a professional.
• Avoid making cuts with the saw between your feet and legs- always cut with the saw to the outside of your legs.
• Never position yourself or others in line with the chain. A broken chain will fly forward in the direction the guide bar is pointing.
• Keep the chains clean to prolong life and to reduce the hazard of debris being thrown.

Drill Press

• Use the drill press in a well-lit area and on a level, clean, smooth surface to reduce the risk of trips and falls around running equipment.
• Always support the work piece so it doesn’t shift or bind on the tool.
• Always position backup material underneath the work piece.
• Use a drill press vise, do not do any “free hand” work, always fasten your stock to the table. Use fixtures to adequately hold, guide and position the work piece.
• Never move the head or table support while the tool is running.
• Before starting operation, jog the motor switch to make sure the drill bit or other cutting tools do not wobble or cause vibration.
• Use the bit and speed recommended of the job and work piece material.
• Never climb on the drill press table.
• When drilling wood or metal, raise the drill bit frequently to clean chips from the hole.
• Prior to start, center punches the areas to be drilled for an easier and less chance of slippage.

Machinery and Machine Guarding

Moving machine parts must be safeguarded to protect operators from serious injury. Belts, gears, shafts, pulleys, flywheels, chains, and other moving parts must be guarded if there is a chance they could come in contact with the operator or a bystander.

Hazardous areas that must be guarded include the following:
• Point of operation: Area where the machine either cuts, bends, molds, forms, or rotates.
• Pinch/nip point: Area where moving machine parts can trap, pinch, or crush (i.e., roller feeds, intermeshing gears, etc.).
• Sharp edges
• Stored potential energy
• Guards must be in place. If you notice that a guard is missing or damaged, contact your supervisor and have the guard replaced or repaired before beginning work.