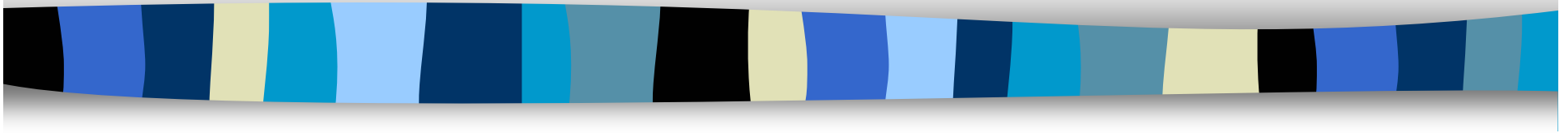


Shop Safety

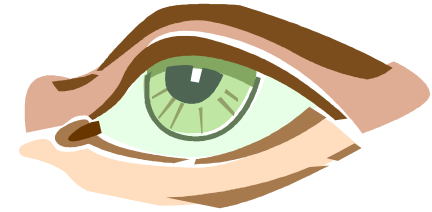


- *Machine Shop Hazards, Machine Tool Safety*

Shop Hazards - General

■ Hazards to the eyes

- Metal chips, particles, and dust



Safety glasses



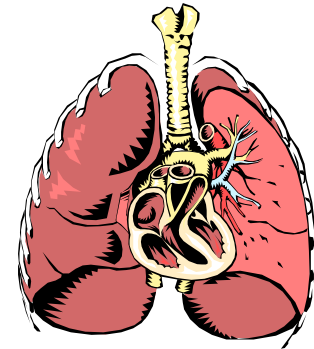
Safety goggles



Face shield

Shop Hazards - General

- Hazards to the lungs
 - Dust in grinding



Mist and Dust Mask



(Paint spray) Respirator

Shop Hazards - General

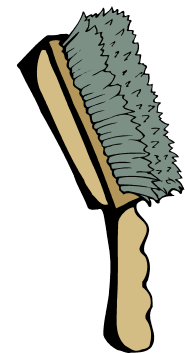
■ Hazards to the hands

- Sharp chips, rotating/moving parts, cutters can cut work pieces and arms.



Don't wear gloves

- Don't wear gloves except welding.
- Keep your fingers at a safe distance from moving parts.
- Turn off the machine before you measure a work piece.
- Don't brush chips away with your hands or a rag; use a brush for that.



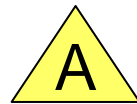
Shop Hazards - General

■ Hazards from fire

- Keep flammable materials (oily rags, paper,...) away from source of heat.
- Know where the fire extinguishers are located in the shop.
- Oil rags must be kept in a safety can.



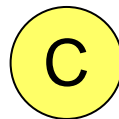
Fire extinguisher



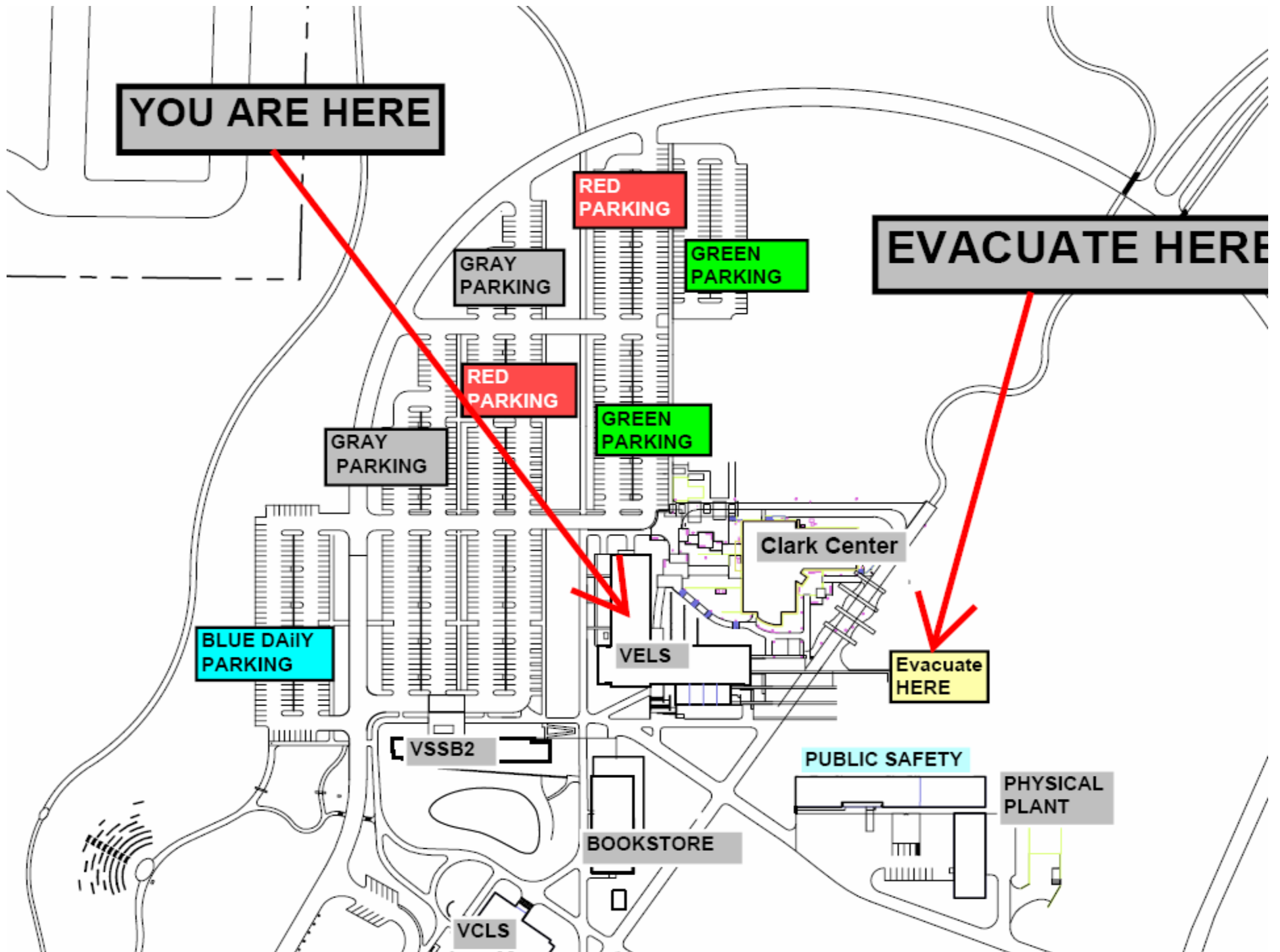
Class A fires: paper, plastic, cloth, wood



Class B fires: oil, solvent, lubricant, etc..



Class C fires: electrical fires with electrical wiring

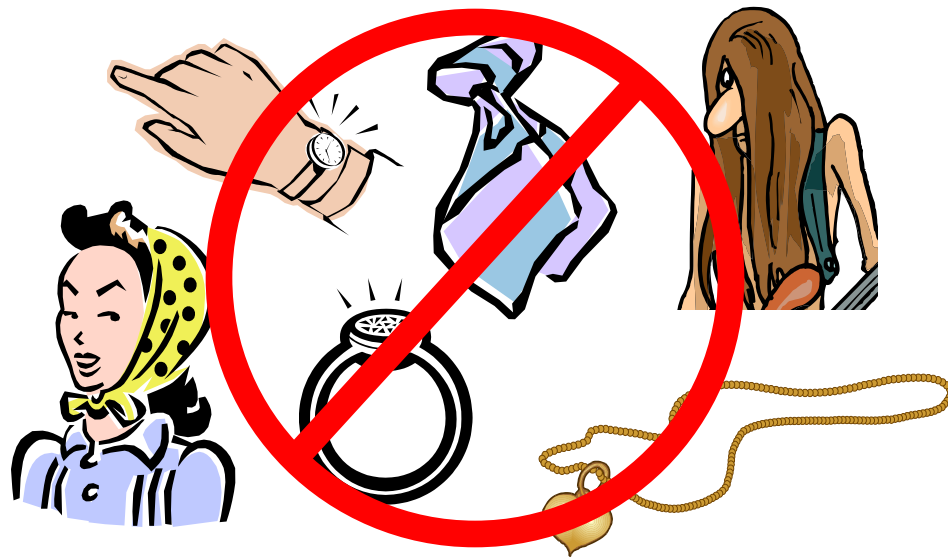


Shop Hazards – Machine Shop

■ All machines

- Do not wear jewelry nor long-sleeved shirts, nor scarves, nor ties, etc...
- No long hair (use hairnet or pin it up under a hat)

**DO NOT
WEAR!**





Shop Hazards – Machine Shop

■ Band Saw Machine

- Keep clear of blade and other moving parts.
- Do not stand in the area perpendicular to the side of the blade.
- Know where emergency shut-off is.
- Make sure that the work piece is proper for the blade.



Shop Hazards – Machine Shop

■ Drilling Machine

- Use proper, sharp, clean bits for the job and material.
- Always support your work piece with backup material.
- Always clamp your work piece.
- Be sure that the bits can be used on the drill press and the speed they should run.
- Never place fingers where they could contact drill or cutting device.
- Remove chuck key immediately after using.
- Do not remove work from table until the drill press has stopped.



Shop Hazards – Machine Shop

■ Turning Machine

- **DON'T** leave chuck key in the chuck.
- **ALWAYS** secure the part and the cutting tool properly.
- Operate lathe only after having received training.
- Reconfirm the power off switches (Primary, Secondary, and Emergency).
- Adjust the tools in the tool rest so that they are slightly above the center to keep the work from climbing.
- Do not lay wrenches and tools on top of a lathe.



Shop Hazards – Machine Shop

■ Turning Machine (Continued)

- **ALWAYS** manually rotate the spindle and part before applying power.
- **Stand to one side** if using a file on revolving work.
- **Guard all transmission parts.**
- **Use a brush to remove chips.**
- **Do not distract your attention from the work.**



Shop Hazards – Machine Shop

■ Milling Machine

- **Operate the machine only after having received training.**
- **Withdraw the fixture a safe distance from the cutter while loading, unloading, gauging, etc.**
- **Secure the work properly in place.**
- **Avoid too heavy a feed or too heavy a cut.**
- **Use lifting device when heavy materials must be handled.**
- **Use a brush or rake to remove chips.**



Shop Hazards – Machine Shop

■ Milling Machine (Continued)

- Guard all transmission parts.
- Clean up oil spots on the machine shop floor as soon as they are discovered.



Shop Hazards – Machine Shop

■ Grinding Machine

- **Stand to the side when turning on a grinder or belt sander until operating speed is reached.**
- **Do not grind on the side of the wheels.**
- **NEVER Grind aluminum on any wheel. Use the belt sander.**
- **Use light pressure when starting grinding; too much pressure on a cold wheel may cause failure.**
- **Use a coolant to prevent overheating the work.**



Shop Rules – Machine Shop

"Safety Glasses required when machinery is in operation." We recommend that you supply your own safety glasses.

Watch Shop Safety PowerPoint presentation and sign the safety class form.



Shop Rules – Machine Shop

If work needs to be done after the specified open lab hours, we require 24hr notice



Shop Rules – Machine Shop

Process Plan to be filled out and signed prior to any work in the lab

Labs will be closed from 11:30 am to 1:30 pm and 3:30 pm with exceptions only by prior arrangements.



Shop Rules – Machine Shop

Allow 15 minutes to clean up the machinery/work area prior to leaving a lab session

No projects can stay on any machine unless prior approval from faculty or technician



Shop Rules – Machine Shop

Sign up for lab times on SERS.

If tools are damaged or dull please give to faculty or technician.



Shop Rules – Machine Shop

No visitors (non WSU-V employees/Engineering students) will be allowed in the lab while the machinery is in operation.

Be ready at the beginning of your allocated time to check out the tools you will need



Shop Rules – Machine Shop

Return the safety glasses to the box on the cabinet. Please do not take the glasses with you since other people will need them for their lab session.



Shop Hazards – Machine Shop