

LAB SECTION/ORDER OF TRAINING	SILab Training Updated August 2022 If the SILab Advisor does not mention these items, please ask. If the SILab Advisor does not know the answer, please contact silab@bu.edu.
Before Training	Inform people that training will be ~40 minutes and they should take notes Show where to store bags/coats to be out of the way for safety -student made coat rack!
Start of Training	SILab Advisor introduction: name, pronouns, dept., status, and (optional) interests. Ask users their interests if doing a small group training, can add to their experience Emphasize safety- No open toe shoes Roll up sleeves Nothing hanging that will catch in equipment e.g. jewelry, neck chains Must wear safety goggles, even if you wear glasses Pull back hair (we have hair ties with safety glasses) No wrist watches or jewelry Ask SILab Advisors for help, never guess or assume Always be with a buddy (ask SILab Advisor to assist with larger equipment) Use common sense No headphones/earbuds No loud music Ask SILab Advisor to show you tool or equipment for first time or if unsure Mention we have a lot of information on our website. (Schedule, events, equipment info, 3D printer reservations, etc)
Front Area	Point out/explain: • Storage lockers: storage available currently on a semester-by-semester basis, just ask and can be assigned a locker by a SILab Advisor (more lockers in back) • 3D printers: PLA, ABS, and Resin printers, reserve printer on the website and we email when print is complete • Soldering irons, Blue electronic stock tower: contents available for student use, but don't be greedy, if there is a drawer for it we usually stock it
Hallway	Blue Drawers: • Left side generally has hand tools and bolts for fastening. Also has majority of glues • Right side generally has hand tools at the bottom and small/flat stock in the middle. Sandpaper in top drawer • Top is for gloves, wood glue, and 2 part epoxy. Point out step ladder near shelves for people to use as needed

Large Stock Rack	Storage for larger/longer stock, generally separated by material type Remind to not put wood that has metal (ex nails/staples) in the woodstock area: take the metal out first
Project Storage area (by Turnpike window ONLY)	Do not leave projects on tables. Make sure the project has your name, e-mail, the date, and when you will return or it will be tossed out. All projects are removed at the end of semester unless given special permission by kkelso@bu.edu. Don't take projects or materials that are not yours.
Paint and Chemical storage	Paint, wood stainers, etc are stored here. Anything that has strong fumes really. High fume activities (wood stain, spray paint, smelly glue) should be done Outside in the parking garage with a blue tarp since we don't have the best ventilation in the building. Let it rest for ~15 before bringing it in if it is something that would need to be brought inside before drying
Crossing the Caution Line	Put on safety goggles, even if you wear glasses. Show ear plugs/muffs and hair ties If there is enough safety gear for everyone, then demonstrate use of the tools in the shop, otherwise mime how you would use them We have gloves but they are actually unsafe to use with a lot of the equipment
Lathe	• Every tool in SILab is considered dangerous but this is the one of the most dangerous ones. • Explain that it spins the part and cuts around the outside edge ◦ ex: stair banisters, bolts, and dowels • Tie up long hair and any loose clothing: things could get caught in the spinning mechanism. • Fasten stock (can use wood, plastics, aluminum, and if you have some experience and follow the information, steel) securely. • Describe safety concerns with the key (must be removed before use) and that guard must be lowered • Describe concerns with running into the chuck when moving part in x-direction.
Scroll saw	• Small blade goes up and down to make small detail cuts • Only wood and plastic • Adjust the blade guard/foot to the right height to hold material down • Check speed • Show cutting area/where your hand shouldn't go
Miter Saw (Chop Saw)	• Cuts material in a straight line at whatever angle it is set to • Wood, plastics, depending on blade could also do aluminum • Unlock and raise blade, show blade guard • Show LED Light and blade on/off trigger ◦ Mention or show how blade can jump up when turned on • Point out cut path on table and to keep hands out of the circular part of the table at all times • Large or irregular shapes must be clamped down (show where clamps are) • Material should always be snug against the fence • Show adjusting angle of blade path, mention that the angle of the blade can also be changed but don't need to demonstrate it during general training • Dust collection bag/vacuum attachment spot

	● Demonstrate or mime a cut
Bench (Wheel) Grinder	● Only steel – bolts, pipes, etc. ● Wheels are different grits, both spin at same time if turned on ● Rest material on plate ● How to clean gunk off wheels
NC Mill	● Creating complex or precise parts: cutting tool that goes up and down and part can be moved in 3 axes as well ○ Show x, y, and z axis handles ○ Show quill movement ● Always keep hands clear of the spindle when the mill is running! ● Wood, plastic, aluminum, and, if you have some experience, steel ● Show difference between End Mill Bit and Drill Bits ○ Also show roughly where they go in the cabinet (organized by size) ● Turn spindle on (forward/reverse/off), and brake ● Change spindle speed (ONLY WHEN ON) ● Put bit in collet, collet cover on, insert tool into machine ● Mention computer control (Acu-rite) and some of the basic programming it can do and how to use it as a digital readout for the movements of the mill
Drill Press	● Drills holes into parts: useful for perpendicular holes or when drilling larger holes ● Wood, plastic, aluminum, steel ● Use clamp or vice clamped to drill press plate to hold stock ● Raising or lowering the drill press plate ● Key to change bits ● Raise/lower the bit
Band Saw	● Cutting down stock or cutting small/slightly curved parts with a blade that is in a loop cutting in a downward motion to the table ● Wood, plastic, aluminum ● Where to keep hands out of/where it is safe to put hands ● Push sticks ● Vacuum attachment
Belt/Disc Sander	● Sanding medium sized pieces of material quickly ● Direction belt and disc spin ○ Only sand on top of the belt ○ Only sand on the left side of the disc and always have stock angled down or straight and touching the plate in front of the disc ● Wood and plastic only ● If gets gummed up, use cleaning plastic rod, located on pegboard
Wood Planer	● Spinning rollers and blades on the top part of the inside of the machine, pull material through and cut off the top layer of wood to make parallel to the bottom edge of the board. ● Wood only! And inspect wood to be sure there are no nails/staples/other metal in the wood if you aren't sure, don't use it on the planar ○ Dimension restrictions: ■ Can't be wider than 13" (330mm) ■ Can't be shorter than 12" (305mm)

	■ Can't be longer than space between back of planer and wall ● Dust collector for planer (different from vacuum) ● Only cut a little off at a time ● Only change speed/cut finish type when machine is on
Jointer	● Cutting bottom edge of wood off to be perpendicular to fence ● Wood only ● Blades spinning and facing up under blade guard! ● Always use push handles to push wood through ● Use the shop vacuum to collect dust
Battery Chargers	● Batteries go with hand, cordless tools in black cabinet. Match the battery brand to the brand on the tool you are using ● Charge batteries immediately after use
Hand tools (peg board)	● Common hand tools are available on pegboard (some are also in the blue cabinets in the hallway) ● Chisels and pointed (tapping) screws (usually construction wood screws) are in the blue cabinet under the back table ● Return tools to where you found them when you are done
CNC Mill	● Like the NC Mill but smaller and can do more precise controlled work: computer reads STL files and moves the part and the spindle according to paths you set to carve out your design ● Always close cover when moving the spindle ● Secure material to bed before cutting, never cut all the way through to avoid cutting into the bed and to keep the material from free floating in the machine ● Don't close or turn off the laptop if the CNC is running
Hand Power Tools Cabinet (Black Cabinet)	● Ask a SILab Advisor before using any tool in the cabinet! ● Tools organized by type, labeled on inside door ● Drill bits, not for cutting but for screwing things in, are in this cabinet ● Only SILab Advisors can use the circular saw and jigsaw, if you need one of those tools to complete your project you must ask for help
Display Table	We always want to display projects on the table and at the website! ● If you want to display on the table: email silab@bu.edu with your name, class year, major, and a title or blurb about what the project is ● If you want your projects displayed on the website: email silab@bu.edu with pictures, your name, class year, major, and some short text about what the project is
Phones	● In emergencies, call 911 or BUPD 617-353-2121 ● Phones are at front table and between the Black and beige cabinets
Lab Stock Storage Cabinet	● If you are looking for a small piece of stock, or a blade is dull on equipment, ask a SILab Advisor as there may be a replacement in this cabinet. ● Only SILab Advisors should be accessing this cabinet
Final Reminders	● First Aid Kit Locations (Front door, safety glasses, above red cabinet, by the sink, and back door): if seriously injured call BUPD ● No bio or combustible materials allowed in SILab

	● You must clean up after yourself and when leaving! ○ Sweep/Vacuum ○ Put away all tools, stock, and store your project properly ● Report broken items, even if you broke them. You won't get in trouble but broken equipment or tools can be dangerous so we need to know.
Back to Front Area	● Administer quiz. ● Yay, now have access any time SILab is open! ● Encourage users to visit SILab often and use the website!