

Categories	Equipment by Category	Description	Capabilities (examples)	Size Restrictions	Pre-Req's	File Formats
Additive Manufacturing	SLA 3D Printer	Operates by using UV light to cause chains of molecules, in a photopolymer resin, to link and become a polymer material.	Print objects that need to be highly accurate or have intricate designs	Maximum bed size is 4 in x 4 in x 4in	Yellow tag tool safety test and demonstrate proficiency	Preferred file format is STL, additional file formats supported by Cura:3MF and OBJ file formats
	FDM 3D Printer	Uses an additive method of printing by laying down plastic using an extruder on a coordinate system.	Used to create unique parts for students out of a variety of plastics.	Maximum bed size is 12 in x 12 in x 12in	Yellow tag tool safety test and demonstrate proficiency	STL or OBJ File formats
Computer Aided Manufacturing	CNC Router (4x4)	Cuts 2D pieces out of material or object of choice	A CNC router can be used in the production of many different items, such as door carvings, interior and exterior decorations, wood panels, sign boards, wooden frames, moldings, musical instruments, furniture	Bed size 4 ft x 4ft x 3 inches this machine holds and accuracy of .001 inch	Red tag tool safety test and demonstrate proficiency	DXF for 2 d cuts and STL for 3d cuts
	Desktop CNC	Used to cut out small intricate parts that require high precision	A CNC router can be used in the production of many different items, such as door carvings, interior and exterior decorations, wood panels, sign boards, wooden frames, moldings, musical instruments, furniture	Maximum machining area is 5 in x 5 in x 3 inches holding a tolerance of 0.0001 in	Red tag tool safety test and demonstrate proficiency	DXF for 2 d cuts and STL for 3d cuts
	Laser Cutter	laser beam is directed at the material, which then either melts, burns, vaporizes away, or is blown away by a jet of gas	Cuts out 2d parts from sheet goods. Materials include: plywood, acrylic, rubber, paper, foam core, and cardboard	with a cut size of 17x14 the laser cutter can cut through a variety of materials, some of the most common materials that we cut are foam core, acrylic and plywood.	Red tag tool safety test and demonstrate proficiency	Dxf preferred
Traditional Manufacturing	Bandsaw	Cuts out irregular shapes in perspective material being used	Can be used for uniform cuts to a material, but also irregular shapes like a jigsaw. Can be used for metal or wood work	Cuts soft metals, wood and plastics up to six inches deep and 9-3/4 inches wide.	Red tag tool safety test and demonstrate proficiency	NA
	Metal Lathe	Cut outs for metal circular objects	Can be used to remove material from a piece of metal using an internal rotation mechanism. Examples include reducing the diameter of a piece of metal	Swing over bed distance 8.5 inches, distance between centers: 20 inches and a spindle through hole od .8 inches this machine is ready to assist in small turning projects.	Red tag tool safety test and demonstrate proficiency	Drawing required for this machine, hand drawing, will work although you must demonstrate that you have thought out your process and are not making it up as you go
	Belt Sander	Sands materials at 90 degree angle	This machine is used to smooth out any grooves or roughness in a material for inspection or further use	The sanding disc is 6 inches in diameter with a 4 inch wide sanding belt.	Yellow tag tool safety test and demonstrate proficiency	NA
	Miter Saw	Used to cut down pieces of wood or metal at set angles	These saws are very powerful and can be used to cut pieces of wood	with a 7.25 in blade the chop saw is perfect for cutting small lumber down to size	Red tag tool safety test and demonstrate proficiency	NA
	Drill Press	Makes holes of desired size perpendicular to work surface	often used for miscellaneous workshop tasks other than drilling holes. This includes sanding, honing, and polishing. These tasks can be performed by mounting sanding drums, honing wheels and various other rotating accessories in the chuck.	With a 1/2 in chuck this upright drill press is capable of drilling into a variety of materials.	Yellow tag tool safety test and demonstrate proficiency	NA
	Wood Lathe	Cut outs for circular pieces of wood	Does the same thing as a metal lathe, except only used for wood	with a 4 in chuck, this machine is capable of turning anything from a baseball bat to a salad bowl	Red tag tool safety test and demonstrate proficiency	Drawing required for this machine, hand drawing, will work although you must demonstrate that you have thought out your process and are not making it up as you go
Assembly Space	Student Work Spaces	Ample work space for students to work on projects	N/A	currently 3 dedicated work spaces for student projects, with ample space for students to work in the labs	Basic Shop Safety test	NA
	Hand Tools	Includes anything from a screwdriver to a pair of pliers, required for any shop to have.	N/A	Hand tools are available for students to use, some of which are pliers, screwdrivers, sockets, wrenches and many more.	Basic Shop Safety test	NA
	Glues & Adhesives	Used to join various members together	N/A	If you need something stuck come check us out, we have adhesives for wood, plastic and a variety of epoxies and adhesives for your project	Basic Shop Safety test	NA
	Fastener assortment	Mechanically joins two pieces of material together	Mechanical devices such as bolts and screws used to join materials together.	not yet up to date, need to update when things are ordered	Basic Shop Safety test	NA
	Paint Booth	Workspace for painting things	N/A	hood size is 4 ft by 2 ft by 4 ft tall, dont paint your project on the sidewalk come paint your project in a clean, easy to use space.	Basic Shop Safety test	NA
	Student Design Space	Allows students to work on modeling as well as make toolpaths for the CNC machine and 3D printer designs	N/A	computers have the most up to date softwares available to students to do CAD design, CAM and graphics design	Basic Shop Safety test	NA
Additional Manufacturing Equipment	Vacuum Former	Heat up material where it is able to mold and then create a vacuum against a mold to form object	This can be used when you have a mold and you would like to make a plastic replica of that mold to be used	with a serviceable area of 12 x 18 this machine can heat a variety of plastics in order to form them to a mold	Red tag tool safety test and demonstrate proficiency	Before using this machine you must have a model or a mold that you would like to form
	Sewing Machine	Stitches pieces of fabric together	N/A	capable of sewing leather this machine is fit to stitch whatever your project requires. Pouch, strap, backpack your imagination is the limit	Yellow tag tool safety test and demonstrate proficiency	NA
	Injection Molding	Used by pouring molten material into a mold of desired shape	This type of molding is only used for materials that become molten like metals or thermoplastics.	N/A	Yellow tag tool safety test and demonstrate proficiency	You need to have a mold to inject the plastic into.
	Soldering Equipment	two or more items (usually metal) are joined together by melting and putting a filler metal (solder) into the joint, the filler metal having a lower melting point than the adjoining metal	Allows you to work on circuits and circuit boards	N/A	Yellow tag tool safety test and demonstrate proficiency	NA
	Vinyl Cutter	Cuts custom graphics on adhesive backed material	Can be used for sticker cut outs or other graphics	N/A	Basic Shop Safety test	PDF, Jpeg,SVG
	Foam Cutter	Cuts Styrofoam	N/A	N/A	Basic Shop Safety test	NA
	Electronics Prototyping	Rudimentary electronics components, necessary for any electronics work	N/A	N/A	Basic Shop Safety test	NA
	Molding Materials	Used to help create molds for molten materials	N/A	N/A	Basic Shop Safety test	subject or model to mold is suggested
	Design Computers	Allows students to work on modeling as well as make toolpaths for the CNC machine and 3D printer designs	N/A	N/A	Basic Shop Safety test	NA

