

Directors/Technician's	List of Equipment	Categories	Equipment by Category	Description	Capabilities (examples)	Size Restrictions	Pre-Req's	File Formats	How do I Pay?	Cost to Use	Notes							
Dr. Wadhwani	Laser Cutter	Additive Manufacturing	SLA 3-D Printer	Operates by using UV light to cause chains of molecules, in a photopolymer resin, to link and become a polymer material. Uses an additive method of printing by laying down plastic using an extruder on a coordinate system.	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 Cura3MF and OBJ file formats	Currently all file projects are required to be school affiliated, your class or activity code will be charged accordingly		Tuff and clear resins are available							
Dr. Khazaei	Hand Tools		FDM 3-D Printer			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								
Jeremy Hanlon	Glues and Adhesives	Subtractive Manufacturing	CNC Router (4x6)	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										
	3D Printers (FDM)																	
	Band saw		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										
	Vacuum Former	Traditional Manufacturing	Band saw	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. Swing over bed distance 8.5 inches, distance between centers: 20 inches and a spindle three inches out of 8 inches this machine is ready to assist in small turning projects	Red tag tool safety test and demonstrate proficiency	NA										
	Sewing Machine																	
	Injection Molding											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	This machine is used to smooth out any grooves or roughness in a material for inspection or further use	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	
	Fasteners											Belt Sander	Sands materials at 90 degree angle	These saws are very powerful and can be used to cut pieces of metal, but will generate sparks leaving the material very hot	Red tag tool safety test and demonstrate proficiency	NA		
	Molding Materials											Miter Saw	Used to cut down pieces of wood or metal at set angles	Can be performed by 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.	Red tag tool safety test and demonstrate proficiency	NA		
	CNC Router		Drill Press	Makes holes of desired size perpendicular work surface	With a 12 in chuck this upright drill press is capable of drilling into a variety of materials.	Yellow tag tool safety test and demonstrate proficiency	NA	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										
	Computer Work Stations		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 sailboat bowl	Red tag tool safety test and demonstrate proficiency											
	Metal Lathe	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										
	3D Printer (SLA)																	
	Soldering											Hand Tools	Includes anything from a screwdriver to a pair of pliers, required for any shop to have.	N/A	Basic Shop Safety test	NA		
	Chop Saw											Glues & Adhesives	Used to join various members together	N/A	Basic Shop Safety test	NA		
	Disc Sander											Fastener assortment	Mechanically joins two pieces of material together	Mechanical devices such as bolts and screws used to join materials together.	Basic Shop Safety test	NA		
	Drill Press	Paint Booth	Paint Booth	Workspace for painting things	N/A	hood size is 4 ft by 2 ft by 4 ft tall, don't paint your project on the sidewalk, come paint your project in a clean, easy to use space.	Basic Shop Safety test	NA										
	Vinyl Cutter																	
	Foam Cutter																	
		Additional Manufacturing Equipment	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 prefired										
	CNC Mini Mill																	
	Electronics Prototyping											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 servicable 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	
	Poster Plotter											Sewing Machine	Stitches pieces of fabric together	N/A	This type of molding is only used for materials that become molten like metals or thermoplastics.	Yellow tag tool safety test and demonstrate proficiency	NA	You need to have a mold to inject the plastic into.
	Paint Booth											Injection Molding	Used by pouring molten material into a mold of desired shape	two or more items (usually metal) are joined together by melting and putting a filler metal (resin) into the joint, the filler metal having a lower melting point than the adjoining metal	Allows you to work on circuitry and circuit boards	Yellow tag tool safety test and demonstrate proficiency	NA	
	Wood Lathe	Soldering Equipment	Soldering Equipment	Cuts custom graphics on adhesive backed material	Can be used for solder cutouts or other graphics	N/A	Basic Shop Safety test	PDF, .jpeg,SVG										
	Vinyl Cutter																	
	Foam Cutter																	
	Cuts Drydown																	
	Electronics Prototyping											Rudimentary electronics components, necessary for any electronics work	N/A	Basic Shop Safety test	NA			
	Molding Materials		Used to help create molds for molten materials	N/A	Basic Shop Safety test	subject or model to mold is suggested												
			Allows students to work on modeling as well as make toolpaths for the CNC machine and 3-D printer designs	N/A	N/A	Basic Shop Safety test	NA											