

COLLEGE OF ART AND ARCHITECTURE

TECHNICAL STUDIO CNC OVERHEAD MILLING MACHINE

ShopBot PRT 48 x 48

GENERAL INFORMATION

All files must be on USB drives - No CDs, floppies, Zips, portable hard drives, or networking. Your last name must be included in the title of the file that you hope to cut.

Students are responsible for clearing away and disposing of waste material.

It is the responsibility of the student to provide a **workable**, properly scaled file.

Maximum cutting area of the PRT is 48" x 48"

The ShopBot CNC is not available evenings or weekends.

The ShopBot CNC is for academic projects only.

Access to the ShopBot is on a first come first served basis. However, if your file or materials are not properly prepared you will be moved down the list.

Allow yourself a minimum of 72 hours before deadlines to start file cutting, particularly with 3D models. Many files take several hours to cut and you may have material, file, or design problems that you need to resolve.

Materials that can be cut on the ShopBot include: solid wood stock, plywoods, particle boards, mdf, tempered hardboard and acrylic.

It is rare that we are able to cut your file on the same day that you bring it in so plan accordingly.

2D WORK

2D files created in AutoDesk should be exported as a 2007.dxf or 2007.dwg file. This is done through the "Export to AutoCAD" option under the File menu. It is not a "save as" or a simple export.

Illustrator files must be saved as an .eps, and should be back-saved as a Version 8 file. Stroke weight should be "1" for lines

Check for and remove all double lines or line remnants as they will make it impossible to create toolpaths.

Remove all extraneous information from you file such as hatching, title blocks, dimension lines, text, etc. Leave only the lines that you wish to have cut. Check for double lines.

All lines must be poly-lines (no spline lines!). All objects must be joined and closed or they will not toolpath.

Objects with different cutting depths must be on separate layers with different colors. The title for the layer must indicate the nature of the object (i.e. street, sidewalk, etc.) and the cutting depth in decimal inches.

You must leave an uncut border of at least 1/2" around the perimeter of your board.

Leave adequate room between your parts on your sheet as follows:

1/16" through 3/8" thick material - leave 1/2" uncut material between your pieces.

1/2" through 1-1/2" thick material - leave 3/4" uncut material between your pieces.

3D WORK

3D files created in SketchUp, Viz, 3-D Max, 3D AutoCad, or Rhino must be saved as .3ds or .stl files.

3" is the maximum thickness of material, but models must be designed to allow a minimum 1/8" uncut base under the model to remain.

Do not leave any extra material around your 3D model.

Models taller than 3" thick may be cut by slicing the model into multiple layers in your design software. These layers may then be assembled into a larger model after cutting. Using this technique, the maximum height is limitless.

Virtual files must be scaled to the student's needs before presentation for toolpathing and must match the material size.

Model materials (typically mdf) must be prepared by the student, and the outside dimensions of this material must match the actual size of the virtual model.

Materials that are to be glued must be flat and the entire mating surface must be covered with glue.

Glued materials must cure for a minimum of 8 hours before machining.