

DIGITAL FABRICATION CENTER 2008|2009

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Location:

153C –The Fine Arts Building located inside the woodshop.

Hours of Operation:

- Tuesday 10AM – 8PM
- Thursday 10AM – 8PM
- Saturday 1PM – 5PM
- Sunday 10AM – 6PM

Laser Cutter









The Universal Laser System X2-660 Laser Cutter and Engraver has a 32"x18" cutting surface with a single 60 watt laser. It is best suited for the chipboard and thin basswood work that comprises the bulk of the laser cutting jobs in the School of Architecture.

Sign-Up Policy

Students wishing to use the Laser Cutter should come to the room 153C in the Fine Arts Building (inside the woodshop) and sign up for up to a 30 minute time slot. Use of the Laser Cutter is first-come first-serve. However, students may arrive prior to opening of the day's hours of operation but will need to use the official sign-up sheet made available by the Graduate Assistants once the room is open. **No lists will be accepted except those provided by the Graduate Assistant working that shift.** This means that students must self organize and wait in some type of order prior to the opening of that day's shift. *Students must be present when it is their turn to cut. Students may not have someone else submit files for them and may not jump to the front of the line if they are not present when it is their turn to cut.*

Preparing AutoCAD Files

*****Please note that your files need to follow these formatting rules, otherwise you may be asked to reformat your drawing before you cut, thereby losing your place in line.*****

- **Layer/Color** assignment: the laser cutter uses a palette of 8 colors to achieve two things: (1) power and speed settings and (2) cut order. Controlling these two aspects of your job is important for efficiency and accuracy. You should assign lines and objects to separate layers, rather than simply changing their color.
- **Cut order:** you should do etching first and cutting second, nested objects should be cut interior first, exterior second. For example, if modeling a wall with brick texture and a window, etch the brick pattern first, cut the window second, and cut the outline of the wall last.
- **Cut order color assignments:** the following list is the colors and their cut order (i.e. objects that are Red will be cut/etched before objects that are Blue):
 1.  **Black** (AutoCAD index color #7)
 2.  **Red** (AutoCAD index color #1)
 3.  **Green** (AutoCAD index color #3)
 4.  **Yellow** (AutoCAD index color #2)
 5.  **Blue** (AutoCAD index color #5)
 6.  **Magenta** (AutoCAD index color #6)
 7.  **Cyan** (AutoCAD index color #4)
 8.  **Orange** (AutoCAD index color #40)
- **Layout:** In order to pre-layout your print jobs, we recommend drawing bounding boxes on a non-printing layer that are the size of the bed for the system you intend to use, 32"x18" for the X2-660. Putting several of these 'windows' in your file will allow you to perform multiple plots from a single AutoCAD file. It will also greatly improve the speed and efficiency of cutting multiple sheets.

Materials & Handling

- **Acceptable materials:**
 - Chipboard
 - Basswood
 - Paper
 - MDF (up to 1/4" thickness)
 - Hardboard/Masonite (up to 1/4" thickness)
 - Plywood (up to 1/4" thickness)

Other materials should be verified with the GA staff prior to cutting.

- **Unacceptable materials:**
 - Foam core
 - All metals
 - PVC Plastics
 - Glass
 - Wood over ½" thick
- **Flatness:** It is important for safety and laser cutter maintenance that your materials lay flat on the bed so that they do not impede the travel of the laser cutter head or block the airflow from the cone that protects the lens.

Laser Cutter Policies:

- The maximum reservation length is 30 minutes. Students needing longer than 30 minutes will be asked to sign for another time slot. Back-to-back 30 minute time slots are only permitted if there are no additional students waiting to use the equipment.
- Files should be submitted on a disk or jump drive only.
- Files should be a AutoCAD 2004 or later.
- Graduate Assistants reserve the right to decline performing the cuts if they are deemed a) dangerous b) files not properly prepared c) students are not cooperating with any of the guidelines above.
- Off-hour use or use without Graduate Student supervision is strictly prohibited and can result in a student forfeiting use of the equipment for the rest of the semester.