

Laser Cutter Safety and Orientation Training

After the completion of the three sessions listed below, the authorized user can use the laser cutter without mentor supervision. However, if it is discovered that the user is violation any of the rules set for the laser cutter, access to the laser cutter can be revoked at any time.

| Training Sessions | Date | Trainer Initials |
|---|-------------|-------------------------|
| 1 st – Demonstration from Trainer | | |
| 2 nd – Hands on training for Trainee | | |
| 3 rd – Exit Exam (NO assistance from Trainer during this session) | | |

Orientation about the following:

- _____ **General Laser Cutter Rules and Safety**
- _____ **Corel Draw**
- _____ **Material List**
- _____ **Laser Cutter Settings**
- _____ **Clean Up**

If Trainer has gone through all the list material above with the Trainee, sign below.

Print Name (Trainee)

Vandal Email Alias (abcd1234)

Signature (Trainee)

Print Name (Trainer)

Signature (Trainer)

Date

General Laser Cutter Rules and Safety

Fire extinguisher is next to the wind tunnel and entry way.

NO food or drinks past the sink.

ALWAYS turn the air on (50 psi on wall regulator) before you do anything.

Blower must be **ON** before cutting.

Make sure you know the type of material and the thickness of the material that you are cutting

DO NOT cut materials that can damage the laser or produce toxic fumes (see *Material List*)

You are **NOT** allowed to cut geometries in the shape of a weapon(s) (such as a sword, gun, etc.); or components of weapon(s)

Laser can't cut metal (it can etch paint off metal).

You must stay and supervise the Laser cutting during your cut.

The cutting area of the laser is 32" x 18".

DO NOT leave the top door of laser open without the air on.

If unsure **HOW** or **WHY** – **ASK!**

Laser Cutter Hours – 8:00 am – 5:00 pm. (Shop Manager can unlock the door)

Corel Draw

Make sure workspace is 32"x 18" (so it matches the Laser print area).

The (0,0) of the area is the bottom, left corner of the workspace.

If using anything University official images/logos make sure they are properly sized according the University website.

Can import DXF, PDF and images to Corel

Scaling and sizing options available. NOTE: if you are scaling, make sure both 'x' and 'y' values are inputted before you press enter.

There are aligning options available in the Tool menu.

Settings for the various operations are located with Object Properties and Object Manager.

For cutting and vector etch the **style** needs to be set to **hairline**.

You can vector and raster etch texts and images.

Default settings for cutting, vector etch, and raster etch:

Red (cutting):

| |
|---|
| RGB Red: 255 Blue: 0 Green: 0 |
|---|

Blue (vector etch):

| |
|---|
| RGB Red: 0 Blue: 255 Green: 0 |
|---|

Black (raster etch):

| |
|---|
| RGB Red: 0 Blue: 0 Green: 0 |
|---|

Images are usually raster etched

Print to Laser cutter (VLS6.6).

Material List

DO NOT CUT listed on the wall above the computer.

Material that is allowed (< 1/2" thick):

- Wood (usually Birch)
- Acrylic
- Cardboard
- (Power: 100%, Speed: 48-52%)
- Etching paint off metal

Laser Cutter Settings

Select the proper material from the Material menu.

Input the proper thickness.

Make sure Z axis is set to **OFF**.

Make sure the order of the cuts/etches are in the order that you want.

Calibrate/adjust the laser table height for your material thickness.

The calibration tool either goes 'Home' or it is in your hands. i.e. **NOT** your pocket, **NOT** your backpack, **NOT** on the desk, etc.

Make sure that the laser is cutting in the area that you want to cut in.

Check the cut time, make sure it is reasonable.

Turn on the blower before every cut.

Try not to 'double' cut.

Make sure you move the computer mouse every once in a while. Inactivity will cause the computer to go to sleep and the Laser will turn off.

Clean Up

Make sure to clean up after yourself (i.e. turn the air off, masking tape should be placed back into the cabinet, log off, put left over material in the appropriate spaces, etc.)

Place all unusable scrap material (less than a few inches of clear space) in the recycle bin.

Try to remove sharp/pointy edges from usable material before placing it in the scrap rack.

Be considerate about the usage of scrap material and nest/position parts to avoid waste