

What we offer.....

The Industrial Design Department at the Art Institute of Pittsburgh is capable of engraving and/or cutting certain materials using laser technology. We also have the ability to print objects in their entirety from a 3D modeling file.

These services are available to all student of the Art Institute of Pittsburgh. A nominal service fee may apply.

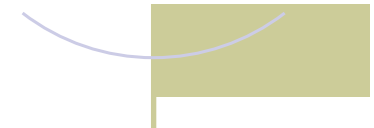
Please see inside for more details



Greg Butler—Shop Supervisor
Dan Bollman—Evening Shop Supervisor
Tool Room Extension—7153



Industrial Design Services



Instructions and Helpful Hints

8th Floor Tool Counter

Preparing Files for Laser Engraving or Cutting

- Begin by saving the file out of the originating software.
- AutoCad version 2006 and less files must be saved as an AutoCad/LT 2000 DXF file before opening in CorelDraw 12. AutoCad files must also be converted to polylines before importing into CorelDraw 12.
- Convert to polylines by selecting **OBJECT—POLYLINE—CONVERT** from the drop down menu. In the command line type **M** for Multiple and hit **ENTER**. Box select your entire file and hit **ENTER**. In the command line, type **J** for Join and hit **ENTER**. In the command line, type **0** for Fuzz Tolerance and hit **ENTER**. Your file has been converted.
- Illustrator CS2 files may be saved straight from the software (.ai extension) before opening in CorelDraw. Photoshop CS2 files may be saved straight from the software (.psd extension) before opening in CorelDraw.
- Launch CorelDraw 12 under **START – PROGRAMS – COREL GRAPHICS SUITE – CORELDRAW 12**
- Select the **NEW** option in the Welcome to CorelDraw window. AutoCad files may be opened directly from the file by selecting the **OPEN** option.
- The new page will default to a size of 8.5 x 11. **ADJUST PAGE SIZE** in CorelDraw to match the material size you will be using in the machine (**Maximum page size is 32” left-right and 18” top-bottom for the EX32 and 24” left-right and 18” top-bottom for the Helix**). There are width and height fields in the upper tool bar for these values. Enter the two values and hit **ENTER**. The page size will change on the screen.
- Import your file into Corel Draw by selecting **FILE – IMPORT** and select your file from the appropriate drive. AutoCad files require that you select **TOP** for the 3D projection and **AUTOMATIC** for scaling. These are usually the default settings.
- When a Photoshop file (or JPG, TIFF or GIFF) is read, CorelDraw will show a 90 degree corner icon on the screen. Place icon in upper left corner of page and left click on the mouse to show the file image.
- The imported file will be highlighted in all four corners and will also have an “X” in the center. You may move the image by placing the cursor on the “X”, holding down the left mouse button and moving the mouse.

Helpful Hints for CorelDraw 12

- Rename the file with an appropriate name and **save the file in a folder labeled with your last name to any drive EXCEPT the Laser Drop Box on the student server**. After the file is saved, open the laser drop box by going to the mapped shortcut under my computer or by navigating through **MY COMPUTER - MY NETWORK PLACES – ENTIRE NETWORK – MICROSOFT WINDOWS NETWORK – AIP – AIP-PC-STUDENT – LASER-DROPTBOX(S)**. Click and drag the saved file into the drop box.
- You can separate all the lines in a vector file by box selecting the file and going to **ARRANGE – UNGROUP ALL**. This will allow you to change the line weights of each line for cutting or engraving. Line weights are changed in the properties window which appears on the right side of the screen when you right click on the mouse and enable properties at the bottom of the drop down menu. The **APPLY** button at the bottom of the properties window must be activated each time a line weight is changed. In CorelDraw, lines with a weight of **NONE** or **HAIR-LINE** will **CUT**. Lines with a weight of **.5 PT OR LARGER** will **ENGRAVE**. After all line weights have been changed, box select the entire file, go to **ARRANGE _ GROUP** and the all the lines become one file again.
- When a file is selected, you can scale it proportionally by holding the **SHIFT KEY**, selecting a corner with the mouse, holding down the left mouse button and dragging the corner outward.
- If you want to scale a file by entering dimension values, first select the file and enter the width and height in the same fields that you used to change the page size. Press enter after you have entered the values. If you are dimensioning a circle, place the same values in each field to achieve the desired diameter. Press enter after you have entered the values.
- In AutoCad 2006, you can convert your object to a polyline under **Modify - Object - Polyline**. Enter **M** for multiple. Box highlight all lines. Enter **Y** for yes when you are asked to convert lines and arcs to polylines. Select **Join** from the drop down menu. Keep fuzz distance value at **0.0** and hit **Enter**. Hit **ESC** to exit. **Save** your file.



Information about 3D Printing

- All 3D Printing files must be created in a 3D modeling program. Some examples of software include Form Z, 3D Studio Max, Maya, Solidworks and Rhino.
- Models must be constructed of solids or surface solids. Any model, or parts of a model made from surfaces **WILL NOT PRINT**.
- Save files to be printed as Stereo Lithography files (.STL extension). It is also a good practice to save the same file as a VRML file (.WRL extension) as a back-up in case the STL file does not work. Maximum plaster print size is 8”x8”x10”. Maximum plastic print size is 12”x12”x12”.
- There is a charge of \$1.25 per cubic inch for Z Corp plaster prints and \$2.50 per cubic inch for Dimension ABS plastic prints. Total volume can be calculated in the modeling software or in the printing software. Models can be scaled in the printing software to affect the cost. All prints must be paid for, before the job can commence, with punch cards that are purchased in the Library or at the Accounting department.
- Files must be reviewed by an instructor by attaching an 8 1/2”x 11” print to the printer output form. All printer forms must then be signed by an instructor and submitted to a shop supervisor for print. The student and the Supervisor will open the file and look for parts of a model that may not print successfully or may not support other parts of the model. The Supervisor has the right to refuse to print any job.