Using Inkscape to Create Laser Cutter files

If you are creating a box, you can use a website for creating the template for the box to import into the design software. We often use http://www.makercase.com.

You will need to take measurements for the size of the box and the thickness of the material for creating your template.

There are other options available for laser cut templates online. Here's a link to some of the options https://makerdesignlab.com/tutorials-tips/online-file-generators-for-laser-cutting/

Step 1: Download Inkscape (Windows, Mac, Linux)

https://inkscape.org/

To use Inkscape with Mac you will also have to download XQuartz (https://inkscape.org/release/inkscape-0.92.2/mac-os-x/107/dmg/)
Note: This guide was created using the Windows version. Mac or Linux versions will be similar, but icon placement may vary slightly.

Step 2: Open Inkscape and set up the page size to match the laser cutter bed

Go to File -> Document Properties
Custom size- Width 24 inches, Height 12 inches (609.6 x 304.8 mm)
Once done, select the X in the top corner of the Document Properties Window to close it.

Step 3: Import a file(s) (Optional)

If you have a file(s) that you would like to import go to File -> Import. Then find the file on your computer and select open. Once the file is imported, you can manipulate it in Inkscape (resize, move, ungroup, etc.).

Step 4: Add any objects, confirm layout and object settings

Use the tools on the left side of the Inkscape window to create objects to add to your file. Make sure you have the correct object settings for if you want the object to engrave or cut. We have highlighted features below with tips to help get you started. Note, based on your window size, some icons may be shifted or hidden in the more options (>> icon) at the bottom of the tool bar. You can also use the keyboard shortcuts.

Helpful menus
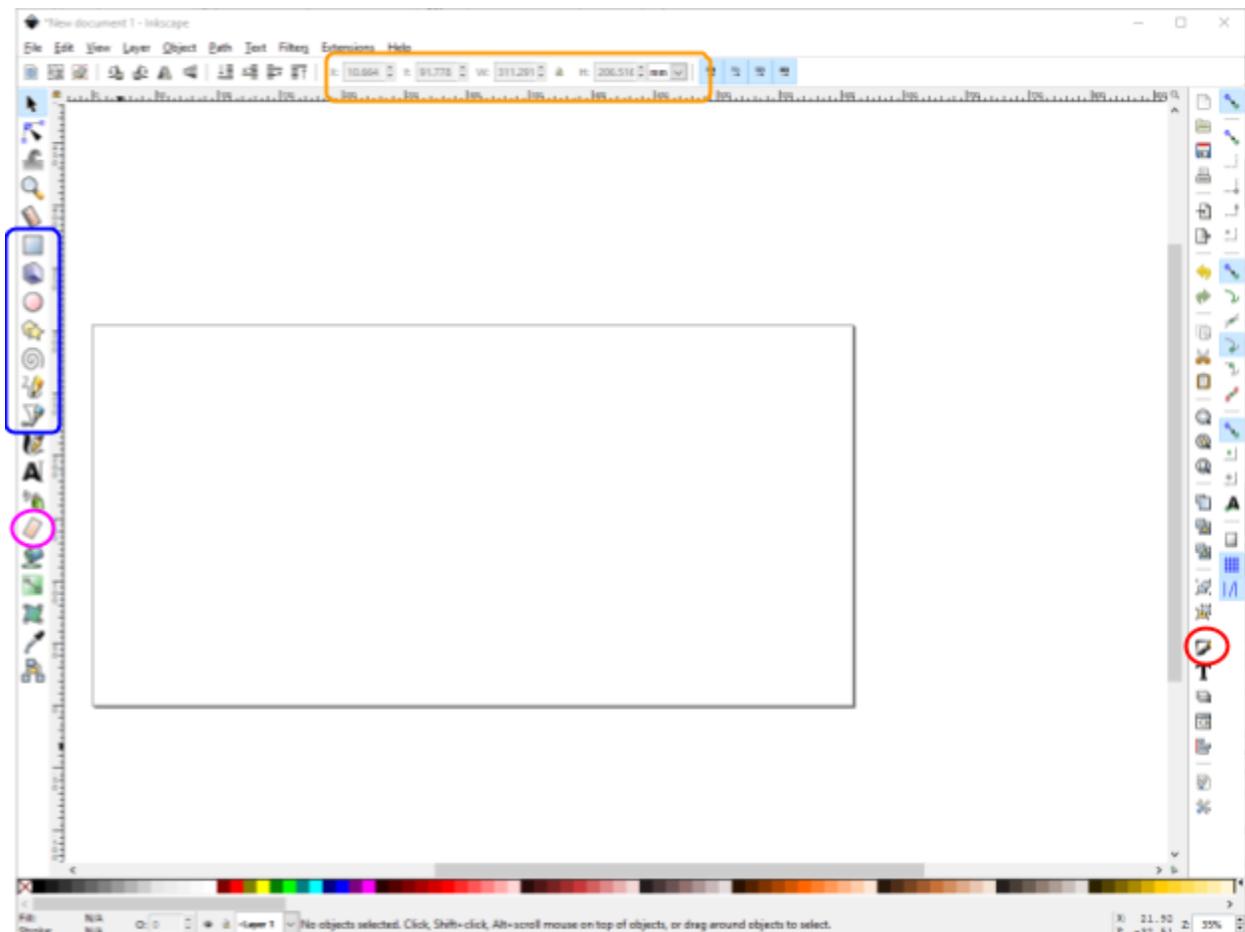
- Position/Dimensions- Located in the menu across the top of the window. Note that this menu changes depending on the tool selected. The first two values give you the bottom left X and Y corner position of the objects(s) selected. The second two values give you the Width and Height of the object(s) selected. You can toggle the ratio lock on and off depending if you want the width and height to scale together or independently. You can also switch between measurement units.
- Create objects- These tools located in the menu on the left side of the window allow you to create new objects- rectangles/squares (F4), ellipses/circles (F5), stars/polygons (*)*, and lines- spiral (F9), freehand (F6), Bezier curves or straight lines (Shift + F6). When you select a tool, a new menu appears at the top of the window under the File Menu. The tool stays selected until you select a new tool.
- Fill and Stroke- (Shift + Ctrl + F) This icon located on the right side of the window opens up the Fill and Stroke menu (figure below) which allows you to set the object fill, stroke paint (outline), and stroke style. If an object is filled in, it will engrave. If an object has a stroke style width (line thickness) of 0.5 pt (0.176 mm) or greater it will engrave. If you want the object to be vector cut, set stroke style to a thin line width (e.g. 0.2 pt or 0.071 mm). Tip: Use two different colors for your strokes (lines) depending if you have the stroke width (line thickness) set for engraving or vector cutting (e.g. set lines 0.2 pt to cut in red and lines 0.5 pt to engrave in blue). You can change the color of the lines in the Stroke paint tab. Note: Thin lines can be hard to see, so you may want to wait until you are done designing to set the thickness for vector cutting. For Mac this function along with multiple other functions, such as the Create Text and Group/Ungroup Functions, will be located at the top of the window, not on the right side.
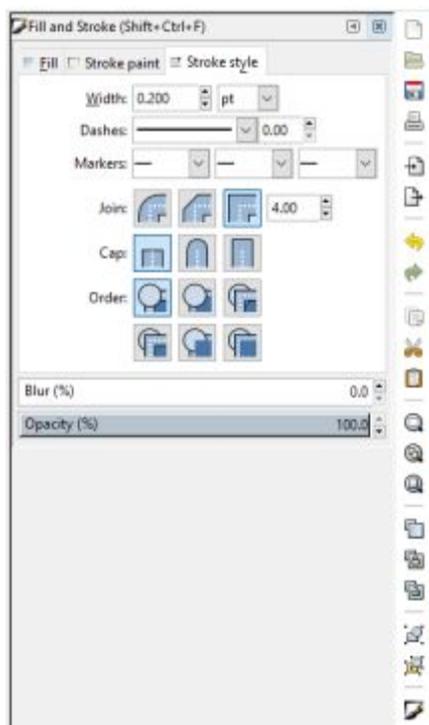
- **Eraser-** (Shift + E)This tool allows you to erase part of an object or a whole object. When the tool is selected a new menu will open at the top of the window under the File menu for you to select your eraser settings. There may be times when it makes more sense to double-click on the object (switches to Edit path by nodes) you are wanting to modify and to manually move or delete the nodes making up the object.

Step 5: Preparing for CorelDraw

Recommend saving a copy of your file before you make these changes in case you have to do edits. Some of these conversions to make the file compatible with CorelDraw can make future edits more time consuming or having to redo work.

- Convert all text to a path to make sure there are no issues if your font isn't installed on the Maker Lab computers. Once text is converted, you cannot change the text. Select the text then go to Path (top menu) -> Object to Path
  - If you want to cut the outline of the text and have the letters connected as a single object, change Fill to No Paint and Stroke Paint to Flat Color. Move letters as needed to have them overlap slightly then select all of the letters, go to Path (top menu) -> Union. This will remove any extra overlapping lines.

Step 6: Save file

Save your file as an Inkscape svg (.svg) so that it can be imported into CorelDraw to be run on the laser cutter.

Video Tutorials

Epilog Zing Machine Tour- https://www.youtube.com/watch?v=R-3A2G2Hrl8
Inkscape Tutorials-
https://www.youtube.com/playlist?list=PLqazFFzUAPc5lOQwDoZ4Dw2YSXtO7lWNv
Inventables Inkscape Tutorial- https://www.youtube.com/watch?v=x629C55iMZk

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For additional information or questions, go to our website at scu.edu/engineering/makerlab or email us at scumakerlab@gmail.com.