CLAS 059
Laser Cutter Certification – Practice Project

After completing the online Laser Cutter training and earning 100% on the final quiz, you must complete a training practice task. This guide will walk you through the official CLAS059 practice project for completing your Laser Cutter certification.

Project: CLAS059 Talisman

To customize a talisman with an incantation or phrase, along with a graphic icon, and fabricate on the BeAM laser cutter.

Step 1: Download the design file for this practice project here: **https://www.thingiverse.com/thing:4568622/**

Step 2: Open the file in Adobe Illustrator - it uses the Murray Hall laser cutter template, so the document is already in RGB color mode.

Step 3: Edit the existing text element by double-clicking the text. You can also add a new text element by using the Text tool (icon: T .) Make sure to click 'Create Outlines' when the text is the way you want it. This converts the text to a shape so that it stays the same, even if the laser cutter computer doesn't have the font you used.

Step 4: Add a picture element by placing an image within the borders of your talisman. You can use an image from Google image search for raster etching (or use image trace to create a vector image.) You can also find a free icon from **https://thenounproject.com.**

Step 5: Review each element of your design and check the stroke/color settings for each one. The three elements of your design should be: the talisman outline (which needs to vector cut), the text outlines (which need to be unfilled to vector etch), and the image (which needs to raster etch.) It should look something like the picture to the right.

Step 6: Each element of your design will be controlled by a different RGB color that the laser cutter sees: RGB red, RGB green, RGB blue, and RGB black. The raster elements in the example are set to RGB green and

Double-check that the two vector elements (outlines and text outline) are set as two different RGB colors, and make sure the stroke thickness is .072pts (aka .001in). In the example, the shape outlines are RGB red and the text outline is RGB blue, but you can use any of the approved laser cutter RGB colors.

Step 7: Determine the initial power/speed settings by consulting the power/speed boards for your material. You **_must_** use scrap material for this practice project, but you can use any material that has scrap available (acrylic, wood, etc.) Make sure you write these settings down to remember them later. See digital versions of the power/speed boards here:
https://beam.unc.edu/files/2019/04/LaserCut_Ebook_V1.pdf

Step 8: *(optional)* If you have a PC, you can download the ULS software and check the time estimate for your project before you get to the makerspace. Find instructions here:
https://beam.unc.edu/files/2019/01/LaserCutter_SoftwareSOP_01012019.pdf

Step 9: At this point, you're ready to head to a BeAM to use the laser cutter. To check which BeAM makerspaces have laser cutters, head to the BeAM website Locations page here: https://beam.unc.edu/locations/

Step 10: Once you check into the makerspace, ask a staff member to add your name to the laser cutter queue and make sure to get all 3 of your checks from BeAM staff to get on the machine as fast as possible.

Step 11: BeAM staff will call your name when it's your turn to use the laser cutter. For a refresher on operating the laser cutter, check out the BeAM Laser Cutter Quick Guide here:
https://beam.unc.edu/files/2020/06/LaserCutterQuickGuide.pdf

Step 12: After you make your wrench on the laser cutter, show your finished practice project to BeAM staff and they will update your record in the BeAM database. Make sure to clean up and reset the laser cutter for the next user.