

LASER CUTTER /ENGRAVER

THE BASICS

- **File Format:** Ai (Adobe Illustrator)
- **Max. Size:** 24" x 18" x 8.5" (610 x 457 x 216 mm)
- Files should be emailed 48 hours in advance to the visiting hours.

FILE PREPARATION

- It will help if your Ai artboard is the same size as your material. Make sure you are in RGB mode for colors and smaller than or equal to the dimensions of the Epilog Helix.
- **To cut (Vector Cutting):** Lines must be a stroke weight of .001 "in pure RED" (R-255, G-0, B-0).
- **To engrave (Raster Engraving):** Shapes must be in grayscale images. Results vary by image and/or material. Try a test piece!
- Hide or delete all hidden layers, overlapping/ duplicate paths, and clipping masks.

MATERIALS

- All materials for laser cutting **MUST** lay flat. Do not bring papers that have been rolled or folded and try to select wood that is not warped.
- Please take a look at the following PDF (tinyurl.com/y77eayo2) for a detailed list of suggested materials.
- Be prepared and bring extra material. There are instances where the Epilog Helix might make a mistake so having more is always a plus. We do not provide material.
- Let us know beforehand what material you will be using. We will then get back to you on whether or not it can be used.

ACRYLIC

- Must have manufacturer's identification to assure that it is safe for laser cutting.
- **Not all plastics can be cut.**
- Inventables.com is an excellent source for acrylic and other materials.
- If you purchase material from Everything Plastics, make sure they put a "**Laser Friendly**" sticker on every piece.

WOOD

- Identify the type of wood you are bringing. Each type of wood requires different settings.
- **Only solid, unfinished wood** can be processed.
- Manufactured woods such as plywood and MDF cannot be cut due to the content of adhesives.

WHAT YOU:

CAN CUT

- Most solid woods (up to 3/8" thick)
- Acrylic (up to 3/8" thick) must be labeled
- Paper (all types)
- Mat board and Chipboard
- Mylar
- Leather
- Most Fabrics

CAN ETCH

- Everything above glass
- Anodized Metals
- Stone and Tile
- Some metals can be "marked" (ask for details)

CANNOT CUT OR ETCH

- Plywood, Masonite, Particle Board, MDF or any other "manufactured" woods
- Foam Core
- Unidentified plastics

If you are interested in processing any other materials that do not appear on this list, please email itt@usfca.edu.

VR & AR EXPERIENCE

VIRTUAL REALITY (VR)

is an immersive medium. It creates the sensation of being entirely transported into a virtual (or real, but digitally reproduced) three-dimensional world, and it can provide a far more visceral experience than screen-based media. Virtual Reality (VR) is the perfect platform to put people first because of presence. You feel like you're really there with people. You have spaces where you can do anything you want including games, work, and free exploration.

THE BASICS

- **Devices:** Oculus Rift, HTC Vive, Oculus Go, Magic Leap
- No preparations needed for experience session.
- If specific application use is required, **please email 48 hours in advance to the visiting hours for availability.**

RESOURCES

- **ETS Training Material:** tinyurl.com/y9u4eh4j
- **VR App examples:** www.digitaltrends.com/virtual-reality/best-virtualrealityapps/
- **Oculus Rift vs. HTC Vive:** www.digitaltrends.com/virtual-reality/oculus-rift-vs-htc-vive/

3D PRINTER

THE BASICS

- **File Format:** .stl or .obj
- **Max. Size:** 12" x 12" x 12"
- Files should be **emailed 48 hours in advance** to the visiting hours
- Printing is done on first come first serve basis, please allow up to two weeks for output.

FILE PREPARATION

- Find a ready-made 3D model (.stl) to print on www.thingiverse.com
- Prepare on Cura
- Download Ultimaker Cura using the link ultimaker.com/en/products/ultimaker-cura-software
- Open Ultimaker Cura.
- Choose File > Open File. Select your file > Open
- Check print time. Scale down if needed.
- Choose File > Save As > Files of Type: G-code
- Send the file to itt@usfca.edu.

MATERIALS

PLA: ITT provides in clear, natural, white, yellow, red, blue, gray, silver, and black.

RESOURCES

Cura setting: all3dp.com/cura-tutorial-3d-printing/
ETS site: myusf.usfca.edu/its/ets/3d-new

INNOVATION LAB

Tues/Thurs | 4:00-8:00pm
Wed | 6:30-8:00pm
Request sessions
by appointment.

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3D PRINTER
VR & AR

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Gleeson 236
Reservations & Questions:
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Training Registration:
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