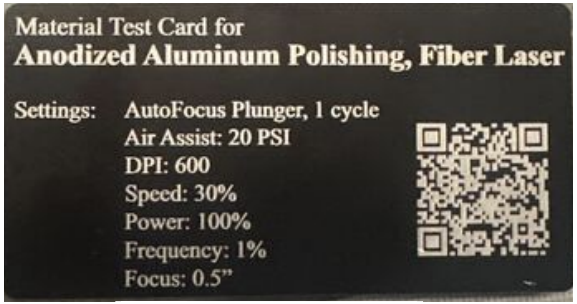
TERRAPIN WORKS

Laser Cutting Workshop: Metal Business Cards



SAMPLE

Students please sign in for the TW Workshop!

SCAN THE QR CODE →

https://go.umd.edu/TWFall2025

Goals

1) Terrapin Works Overview

2) Laser Introduction

2) Laser Safety

4) Make your Business Card

What is Terrapin Works?

- Terrapin Works is home to an expansive collection of additive and subtractive manufacturing resources that enable rapid prototyping in the A. James Clark School of Engineering, University of Maryland campus, and surrounding community.

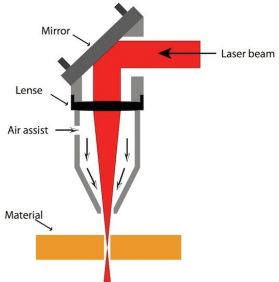
- Our MISSION is to empower the members of the community to reach their highest creative and technical potential by connecting them with cutting edge fabrication equipment, safe spaces, and knowledgeable personnel.

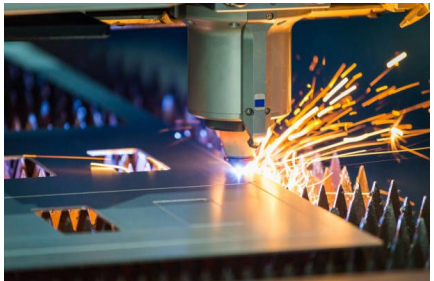
- Our VISION is to accelerate the adoption of advanced manufacturing methods, engineering design processes, and experiential learning by the campus community.
- Learn more about us here!

What is Laser cutting?

- CO_2 gas mixture is energized, releases infrared light
- Light is reflected and amplified into a focused beam
- The beam melts, or vaporizes material
- Tune power, speed, and frequency for cut quality

- Certain lasers are more powerful than others, allowing you to cut a larger variety of material
- Requires vector files (Ai, DXF, SVG) to properly interpret cut & engrave data

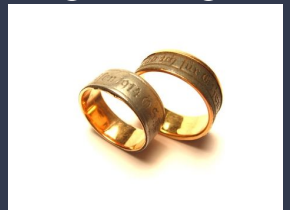




What are laser cutters used for?

- Often used to automate large scale production/manufacturing since they can provide consistent results
- Custom designs & displays

- Engraving Jewelry



- Used to cut small pieces that require high precision

- Personal projects & Prototyping

Rapid Prototyping Center (RPC)

- The Angel P. Bezos Rapid Prototyping Lab is a state of the art makerspace in the E.A. Fernandez IDEA Factory.
- Here, students will have a safe environment where they can learn how to operate a variety of manufacturing tools that can be used to make any design come to life.

- The capabilities of this lab include 3D printing, laser cutting, 3D scanning, water jetting, and basic electronics. If you are already trained, make a reservation on our calendar to get making!
- First time users come stop by the lab for a tour and learn how to reserve machines!

Epilog Overview

- We are using the Epilog 75W **Class 2** CO2 laser
- When all the safety features are working. Everyday examples of these types of lasers include laser pointers and range finding equipment
- People typically use it to cut out enclosure parts, engrave gifts or jewelry, or create awards

- Operates similarly to a CNC router, except instead of a drill bit, it uses high energy focused light to vaporize material in localized areas (the laser beam has approx. diameter of 2 human hairs at its thinnest point! It's like an incredibly sharp and thin knife)

Material Safety



- Certain materials release harmful gases when cut like ABS (chlorine gas) and PVC (Hydrogen Cyanide)
- Do not ever cut or engrave these materials
- In an emergency, utilize the emergency stop button on the machine

- Epilog is not rated to cut thicker material. Avoid anything mthicker than ¼”
- Can only engrave certain materials like metals, glass, and ceramic and cannot cut them
- Some materials the epilog can engrave and cut are Wood, Acrylic, Cardboard, Cork, and Natural leather



Machine Safety

- Always watch the machine as it cuts, do not leave it unattended
- Excessive power or too low of a speed can burn the material and start a fire

- If you are unsure of an operating procedure or material safety, always ask a technician for help.
- Despite the protective polycarbonate windows, excessive eye contact with the laser as it cuts may cause eye damage

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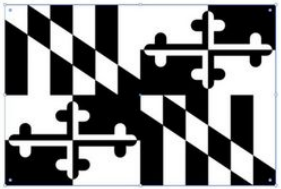
Now let's get started on creating your metal business cards!

Epilog Operation/Steps

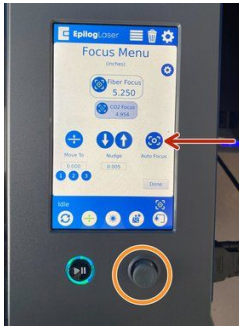
1. To use the epilog first turn on the machine

2. Next set up your file on Adobe Illustrator



3.Then, send the Ai file to the laser job manager

4. Position file, focus, and tune laser settings for your material



5. Send your prepared file to Laze

Card Template

- Access the Card template here: https://go.umd.edu/CardSample

- Feel free to modify or add additional details to make it yours!
- Add your email, phone number, and a QR code (of your resume/LinkedIn/ or portfolio).

University of Maryland

First Name Last Name

Degree & Expected Graduation

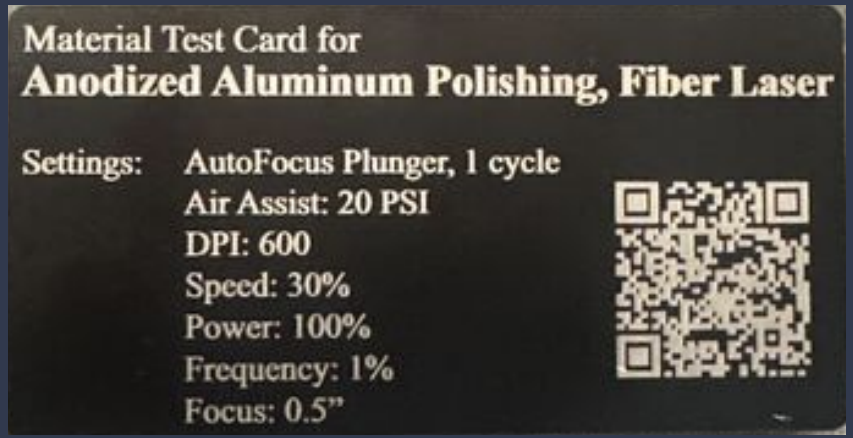
Major

College/Department Name

Contact info

Settings & QR Codes

- Settings:



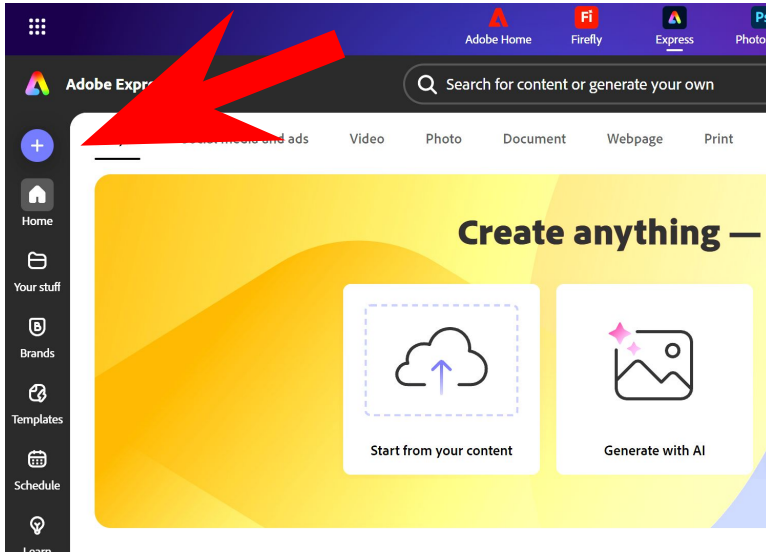
- **QR Code Maker Suggestion:** Use the **Adobe Express QR Code Maker**. Log in with your **UMD credentials**, these QR never expires!

  Site: https://new.express.adobe.com/

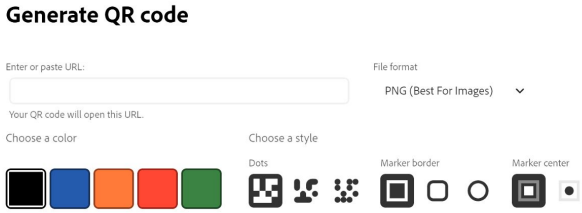
Adobe Express

Use Adobe to make QR codes. They never expire, unlike other sites!

Visit: https://new.express.adobe.com/ (Login using your UMD credentials)



1. Click on the **purple +** sign
2. **Quick Actions** tab (next to Create)
3. **Generate QR code**



Insert your link here!

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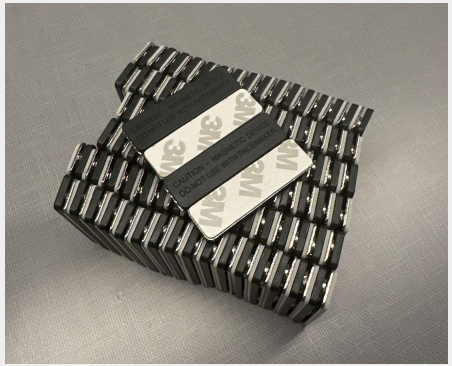
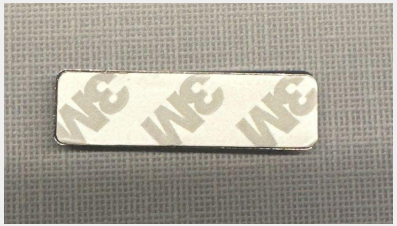
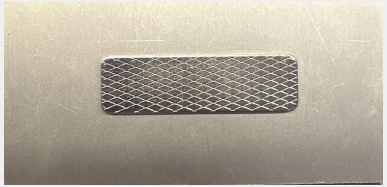
Take a magnet, to pin the card to your clothing!



Step 1: Peel the sticker



Step 2: Place the sticky part in the center of the Metal Card & Done!



Thank You For Coming!

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LAST CALL!!
Please sign in

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Follow Us on IG

Scan QR code to get real-time workshop updates and seat availability!

@TerrapinWorks