

SMFA Welding Studio Policies and Procedures

A002 – High hazard studio

Studio Manager: Adam “Legs” Cowell – adam.cowell@tufts.edu

Contents

Overview	2
Capabilities, Equipment, Materials.....	2
<i>Processes & Tools</i>	2
<i>Materials</i>	3
Access.....	3
<i>Training</i>	4
<i>Hours</i>	4
Studio Safety	4
<i>Shop Attire</i>	5
<i>Fire Safety and First Aid</i>	5
<i>PPE</i>	6
Studio Etiquette.....	6

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Overview

The SMFA Welding Studio exists to support all areas of the school. Once you know the basics of cutting, forming, and welding, the applications are limitless. Projects made in this studio range from functional (ex: bike rack, photo frame, studio stool, forged tool) to supportive (ex: internal armature, custom bracket, shiny pedestal) to expressive (ex: burning family photos, figurative sculpture, performative objects). Really, whatever you can think up – as long as it's safe to create.

Capabilities, Equipment, Materials

Processes & Tools

Space

- Designated hot work area
- Fixed and articulating ventilation
- Moveable steel tables
- 1 Ton hoist
- Downdraft table
- Stockroom for materials purchasing and project storage

Hand tools

- Pliers and vise grips
- Forging hammers and tongs
- Measuring tapes, squares, calipers
- Cordless and corded angle grinders
- Cordless and pneumatic die grinders
- Wall of clamps
- Drills/drivers
- Hand files
- Jigs and fixtures

Cutting

- Jump shear
- Beverly shear
- Horizontal bandsaw
- Vertical band saw
- Manual plasma torch
- Oxy-Acetylene cutting torch
- Drill press
- Turret punch
- Mounted bolt cutter

Hot processes

- 3 oxy/acetylene stations for cutting, welding, brazing, soldering heating
- Large and small MIG welders
- Multiprocess machines with MIG/TIG/Stick
- Natural gas forge
- 85a plasma

Forming

- Ring roller “captain’s wheel”
- 52” Slip roller
- Forming stumps and mallets
- Sandbags
- Arbor press
- Anvils
- Swage block
- 48” box and pan brake
- Foot actuated shrinker/stretcher

Finishing

- Burr King belt grinder
- Palm sander and DA sander
- 2” unitized wheels on roloc pad
- Hot wax
- Three enameling kilns
- Rust solution

Materials

Steel is the material of choice because of its low cost, strength, and ease of use, although we do support other materials such as bronze, aluminum, copper, and stainless steel.

Available for free in the studio*

Sanding / grinding / cutting discs
Soap and metal cleaners
Brazing wire
Welding wire for MIG and TIG
Welding gases
Steel scrap
Sanding belts
Nuts and bolts
PPE
Various gages of steel wire
Hot glue
Grommets
Pop rivets
Salvaged mechanical components

Available for purchase at/through the School Store

Raw materials in steel, aluminum, stainless
Leather gloves
Dremel consumables
Roloc sanding discs

Purchase online

Specialty sanding/grinding discs
Approved patinas
High carbon steel alloys
Titanium
High strength tubing

*Free materials are not unlimited. Use but do not exploit.

Access

This is a high hazard studio - training is required before access is granted. Trainings can take place within a class or by appointment with the Studio Manager. Reading, understanding, and signing this document is important, but it is not meant to replace in-person training.

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Users may only access the welding studio when there is supervision provided by a manager, faculty member, or safety monitor. ID access is only given to these groups.

Training

- Access trainings for the welding studio consist of three parts:
 - Safety and Studio Orientation (1 hr)
 - Cutting Tools and Techniques (2.5 hrs)
 - MIG welding (2.5 hrs)
- For those with prior welding experience, a bench test may be completed after attending the Safety and Studio Orientation. You will be tested for competency and briefed on our standard operating procedures. Access will be granted upon successful completion

Hours

Studio hours are **9am to 10pm** unless otherwise stated on posted schedules.

- Scheduled classes have priority to use any space or equipment. This includes evening, summer, or weekend classes.
 - The Studio Team reserves the right to close the studio at any time. We strive to keep the space accessible as much as possible, but maintenance, safety, and staffing issues do happen. **Check the studio door for any notes on closings.**
- The studio is open to all students, faculty, and staff of Tufts who have completed the access trainings. All must be in good standing with the Studio Team to use the studio.
- Users may only use equipment they have been trained on by faculty or the Studio Manager. Monitors or students may not provide training.
- If you would like to request access or training, please email the Studio Manager to discuss available times.
- Once authorized to use the studio, this access does not expire
 - Refresher trainings are available upon request, and may be required at the studio manager’s discretion

Studio Safety

Our studios are designed with your safety in mind. Adequate ventilation and return air systems keep hazardous and toxic fumes from accumulating. In an emergency there is an eye wash station, emergency shower, and fire extinguishers. For your safety you will be provided with personal protective equipment where necessary.

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There are certain risks involved in working with tools, equipment, and machinery. If you are attentive and alert to the possible hazards and observe safety rules and precautions, then you can expect to minimize risks.

This document covers our basic safety policies. Expect to learn more tool-specific policies and safe work practices within your class or training.

- Always be alert and observant when using the studio.
 - Do not EVER use the studio while intoxicated or impaired. This applies to alcohol, recreational drugs, and even prescription drugs – if your medication insert says to avoid driving or operating heavy machinery, do not use the welding studio.
 - If a faculty member, Studio Manager, or monitor notices you’re intoxicated or impaired, you will be asked to leave.
- You must provide a S.D.S. (Safety Data Sheet) for all materials you bring into the Welding Shop. You must carefully read the form to determine the toxicity of the material and then present to the studio manager for approval.
- Before using any material, you must carefully read all directions and safety precautions.
- Solvents, paints containing solvents, and thinners, are not to be put into sink drains.
- Ventilation must be used anytime you are generating heat, sparks, fumes, or dust. Verify your station is on and positioned properly to ensure protection
- Welding screens are to be positioned around your station to protect others from arc flash

Shop Attire

- Long hair must be tied back while using rotary machines. Examples of rotary machines are:
 - Bandsaws
 - Grinders
 - Drill press
- Headphones, hoodie strings, jewelry and loose long sleeves can get caught in machinery and cause serious injury

Fire Safety and First Aid

Although we make every attempt to mitigate risks in the welding studio, incidents are still a possibility. Everyone must have an awareness of how to respond to urgent matters.

- Know where the fire extinguishers, emergency shower, eye wash stations and first aid kit are located.

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- In case of injury, alert supervisor. We have a first aid kit for minor injuries. If any injury requires more than a band-aid or you are unsure, call TUPD 617 627-6911
 - An incident report must be filed and can be found here <link>
- In case of fire, alert the supervisor and move to safety. On the SMFA campus, we report fires directly to 911 before calling TUPD.
- Note: You are NOT obligated to fight fires of any size. If you have any doubt, do not attempt to fight the fire.
- Students can NOT change Oxy/Acetylene tanks, this must be done by a trained staff member.
- Oil, Grease, and Solvents of any kind must NEVER be brought into the vicinity of the Oxy/Acetylene tanks.

PPE

Users must wear personal protective equipment while the studio is active.

- Natural fiber clothing is required to prevent severe injury in case of fire
Synthetic fibers will melt to your skin when exposed to high temperatures
- Long pants are strongly recommended.
- Leather shoes are recommended to prevent severe injury in case of fire; NO OPEN-TOED SHOES or high heels.
- Leather aprons, coveralls, leather gloves, goggles, welding helmets, and welding jackets are provided as a shared resource.
- Earplugs are provided at no cost. Headphones or earbuds are not suitable hearing protection.
- Safety goggles MUST be worn anytime ANYONE is working in the shop
 - Corrective eyewear must be labeled with ANSI Z87.1 and be complete with side shields to be used as eye protection

Studio Etiquette

The studios of SMFA are small communities where all are welcome to learn. Please respect this studio as a shared resource. Leave it in excellent condition for the next person to use.

- Try to be encouraging, as we are often learning from each other
- All users are responsible for cleaning up after themselves.
 - We provide bench brushes, a magnetic floor sweeper, and a HEPA vacuum. We do not sweep the floor, as this makes dusts respirable
 - Running out of time is not a valid excuse for leaving a mess. Please reserve at least 15 minutes for this.
- Storage space is limited in the back room. Occupy the smallest possible amount of shelf space. Always label with your name and semester.

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- Do not leave work in a dangerous or precarious state. Sharp edges must be covered or softened. NEVER STORE MATERIALS ON THE FLOOR OR LEANING AGAINST ANYTHING
- Tools are shared. Return them to their spot as soon as you’re finished using them. If you are unsure where something goes, please ask
 - Tools cannot leave the welding studio
- Be alert for loose parts, maladjustments, and dull blades. Report any unsafe working condition to faculty, Studio Manager, or safety monitor immediately.

Please adhere to the guidelines set within this document every single time you use the welding studio so we can maintain a safe, functional environment that is welcoming to all. Leave the studio better than you found it. Keep tools clean and in good shape. Hold yourself and your fellow students to the highest standards, and help us build a strong and successful welding community!