

FABRICATION CENTER SAFETY MANUAL

PRAIRIE VIEW A&M UNIVERSITY
SCHOOL OF ARCHITECTURE



The Fabrication Center at Prairie View A&M University (PVAMU) supports School of Architecture students and faculty in exploring and investigating material research, including wood, metals, liquids, plastics, and concrete. The Fabrication Center is an integral resource for students in their academic work and for faculty in their research.

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MISSION STATEMENT

The Fabrication Center at Prairie View A&M University (PVAMU) supports School of Architecture students and faculty in the exploration and investigation of material research including wood, metals, liquids, plastics, and concrete. The Fabrication Center is an integral resource for students in their academic work and for faculty in their research. The School of Architecture's Fabrication Center is to support students and faculty in the exploration, investigation, and education of creative and innovative fabrication methods for their design solutions and research. The Fabrication Center is well situated in the School of Architecture with a strong legacy of innovation in design education and the advancement and infusion of technology in education at the University.

The Fabrication Center empowers students and faculty members with tools for making, prototyping, and constructing various scaled buildings and their components, materials, and techniques. We are dedicated to a creative and inclusive environment through access, training, consultation, and support for various digital and analog tools and equipment. We are also developing and supporting research and discovering new materials, tools, and fabrication processes related to the built environment.

SAFETY STATEMENT AND INHERENT RISK

As the Fabrication Center provides invaluable resources to the School of Architecture's students, faculty, and staff, the highest priority is to create a safe environment by minimizing risk. All rules and guidelines apply to all members of our fabricating community. It is necessary for deans, directors, department heads, faculty, staff supervisors, and shop monitors to take an active role in monitoring users and continuing to emphasize safe practices.

All areas of fabrication come with an inherent risk. Accidents may result in serious bodily harm or death. It is of prime importance that all users follow the proper safety procedures and policies as outlined in this handbook and in the subsequent training to become a certified user. These policies and procedures are designed to minimize risk and enhance the level of safety for our users. Creating a safety culture in our Fabrication Center is every community member's responsibility.

GENERAL INFORMATION

LOCATION

Physical Address

Prairie View A&M University
241 E. M. Norris Street
Prairie View, Texas 77446

Located off the Southeast side of the School of Architecture's Nathelyne Archie-Kennedy Building

FACULTY AND STAFF

Dean of School of Architecture: Dr. Ikhlas Sabouni
Fabrication Center Director: Stephen Song
Fabrication Center Manager: Abel Simie
Fabrication Shop Supervisor: Jerry Westrup

HOURS

Monday-Thursday
8:00 a.m. - 12:00 p.m. and 1:00 p.m. - 5:00 p.m.

Friday
8:00 a.m. – 3:00 p.m.

Please note:

1. The first 30 minutes of the day are for initializing machines and preparing for full operation.
2. The last 30 minutes of the day are for facility clean up.
3. Closed during the lunch hour.

When the University is closed, the Fabrication Center is also closed. Staff absence may cause closure of parts of the facility. If a lab or shop is reserved for a class or a training, the area may be closed for general use. At the discretion of the Fabrication Center Manager or absence of staff members and student workers, the facility may be closed.

OCCUPANCY

**Occupancy limits are forthcoming.*

EMERGENCY ACTION PLAN

Become familiar with the three exits for the facility. If an emergency arises, exit to the closest exit away from the situation and assemble at least 100' from the building. In the southeast corner near the large garage door, do NOT congregate under the overhang.

Emergency Contacts

- Call 9-911 from an office phone
- Call 911 from a cell phone
- Call University Police Department
(936) 261-1375

- Call Risk Management & Safety Department
(936) 261-1745

FACILITY ACCESS

ELIGIBLE USERS

Faculty, Staff, and Students in the Prairie View A&M University's School of Architecture may use the fabrication facility based on certification status. Faculty, staff, and student status will be verified prior to user certification status being completed. The steps for becoming a certified user will be covered in the next section.

Eligibility for User Certification

- * Current PVAMU SOA Faculty member
- * Current PVAMU SOA Staff member
- * Current enrolled PVAMU SOA Student

USER CERTIFICATION REQUIREMENT

Users access the building with an access card through the main entrance. Access is based on a user certification process. Shops and lab areas are accessed through a card system.

The certification process includes the following REQUIRED steps:

1. An annual online Fabrication Center Safety Training
2. A one-time Orientation Tour of the Fabrication Center
3. Tool training specific to the Wood Shop, the Metal Shop, the Laser Cutter / 3-D Printer Lab, the CNC Room.

The online Safety Training must be completed every year. If the training expires, the user's access to the facility and equipment will not be granted, and the user must leave until the training is completed.

The Orientation Tour of the Fabrication Center must be completed only once. This tour provides an introduction to the layout of the facility, an understanding of how access works, safety information, and other important facility information for the user.

Tool Trainings are also needed on a one-time basis. In tool training, the user will gain knowledge and skills to operate basic tools in the specific area. Completing tool training will certify the user to have access to that specific shop / lab.

For example, a student who has completed the online Safety Training and the Orientation Tour signs up for the Wood Shop Tool Training. When that student successfully completes the Wood Shop Tool Training, he/she will have access to the Wood Shop. This particular student will not have access to the Laser Cutter / 3-D Printer Lab until he/she completes the Tool Training for the Laser Cutter / 3-Printer.

SAFETY AGREEMENT FORMS

All users must have a Safety Agreement Form on file with the Fabrication Center. These include the general safety agreement form, as well as shop / lab-specific safety agreement forms that are provided during online training and tool training. The students and faculty members are required to submit a liability agreement form for a design-build project or use wood or metal fabrication equipment in the Fabrication Center. Please download the [AGREEMENT FOR WAIVER, INDEMNIFICATION, ASSUMPTION OF RISK, AND MEDICAL TREATMENT AUTHORIZATION FORM](#) and send it an email to atsimie@pvamu.edu with your

signature.

MEDICAL CONDITIONS AND SPECIAL NEEDS

The Fabrication Center requires any student with a medical condition to consult with their personal physician prior to using the facility. Prairie View A & M University does not assume responsibility for any harm that might occur to anyone as a result of a prior medical condition. Should such a medical condition be present, a doctor's approval in writing must be provided and filed in the Fabrication Center. Once read, please sign your initials next to each condition that may apply to you. Please inform the Supervisor immediately if you are sensitive to or have issues with any of the conditions listed below. It is your responsibility to inform on-duty supervisor each time you enter the fabrication area.

1. Dust allergies
2. Latex allergies
3. Any other allergies that may be present
4. Physical contact. For example, in the situation that a supervisor notices an unsafe condition, physically moving a user to adjust a work habit or to minimize risk may be necessary
5. Loud background noises and/or commotion caused by machines
6. Any other need that may require special attention

POLICIES AND PROCEDURES

VISITORS

All visitors must check in at the front desk upon entry. Visitors are required to wear a badge for their entire visit and must be accompanied by a certified user. Visitors are NOT allowed to operate tools / equipment or be in a working area while construction is taking place. Visits must be scheduled and approved by the Fabrication Center Manager or Shop Supervisors.

Prairie View A & M University alumnae are considered visitors to the facility. Prairie View A & M University's School of Architecture alumnae are considered visitors to the facility. Alumnae are not eligible for user certification.

RESERVING AREAS FOR CLASS USE

Faculty may reserve a room, shop, lab for their class. Reservations must be made at least one week ahead of time with the Supervisor for the specified area. Provide a brief description of activity and understand that the reserved time must include time for any demonstration needs and student use. All reservations must be approved by the appropriate Supervisor. In the case that there is not a supervisor over the immediate area, reservations go through the Fabrication Center Manager.

During a class reservation, the area is closed to other users. **A trained monitor must be present at all times while students are working in the Lab.**

REPORTING ACCIDENTS

NON-INJURY ACCIDENTS

Report near misses and accidents resulting in machine damage, material "kick-back", and other unsafe events. The Supervisor or Shop Monitor can address corrections, adjustment, and training as necessary. If gross negligence is determined to be involved in the course of a non-injury accident, a required meeting between the user(s) and the area supervisor must take place before access may resume. If an individual is consistently working in an unsafe manner, privileges will be revoked.

INJURY –CAUSING ACCIDENTS

Immediately report injury-causing accidents to the Supervisor or Shop Monitor on duty. Notified staff will follow established first-aid procedures. All injury-causing accidents will be reviewed and require a meeting between the area-specific Supervisor and the user(s) to determine the cause of the accident. As necessary, corrective measures and training may take place to minimize the risk of similar accidents being repeated. If gross negligence is determined, a user may be suspended and/or privileges revoked.

STORAGE OF MATERIALS AND PROJECTS

Storage of materials in any of the fabrication areas is prohibited. The lab is not responsible for any projects left unattended. The area specific Supervisor must approve any projects left overnight. Approved projects need to display all necessary contact information. Projects left overnight must be retrieved by 9:00 am the following morning. The Fabrication Center's staff may dispose of projects that have been left for one week.

POLICIES AND PROCEDURES

HOUSEKEEPING

Each user is responsible for clean-up and tool return immediately after use. User must clean off machines and the immediate work area. Appropriate cleaning methods will be covered in tool training. The last person to use a machine is responsible for cleaning the machine and surrounding work area. A Supervisor may revoke privileges of a user who consistently fails in their clean-up responsibilities.

Good housekeeping is the foundation of a safe, accessible, and healthy workplace. All areas must be kept clean and orderly with all necessary things in their proper places.

TOOLS, MACHINERY, AND MATERIALS

Tools and Machinery in the Fabrication Center each have an intended use for specific materials. The user is responsible for using tools and machinery for their intended purpose, as well as, for the appropriate materials. If the user does not know, the user needs to ask the Shop Supervisor or Shop Monitor. See the Shop Supervisor or Shop Monitor, if using unique materials. If faculty or students need to check out a tool or equipment, faculty and students should sign the check-out form from the shop supervisor's or main office.

Salvaged and reclaimed material may be used with careful consideration of the condition of the material. Used wood and wood based materials may be processed in the shop as long as the material is clean, free of dirt, grit, grime, metal, paint, varnishes, enamel, moisture or abrasive materials. Material that is excessively contaminated with any of the above will not be permitted. Users using salvaged materials may be liable for damage to the tools and equipment caused by those materials.

Pressure treated/chemically treated wood must be approved by the Shop Supervisor prior to working. All wood, including tree limbs, must be completely dry before working with in the shop. Consult with Shop Supervisor before attempting to cut unstable materials (limbs, etc.) as they pose potential dangers when processing.

Many areas in and outside of the Fabrication Center are inappropriate for concrete work and painting. Concrete work, plaster work, and painting, including spray painting, must be done in an approved area. Concrete, plaster, and paint may not be worked with on equipment or machines in shops. Users who use these materials in areas that have not been approved may be held responsible for damage and clean up and may have their privileges revoked. These rules are meant to insure a safe and orderly work environment. Please respect them.

AVAILABLE MATERIALS

The Fabrication Center has a revolving stock of materials available for art projects, research, tool training, and model building. Inquire with Shop Supervisors about these free materials. The PVAMU SOA Fabrication Center and its employees are not responsible for materials once a user has taken possession of the material. Please do not hesitate to ask about the availability of these materials, as they come to us through cut-offs, mistakes, and over stock. These materials are on a first-come, first-serve basis. Only take what is needed.

PERSONAL PROJECTS

Personal projects must be approved by the Shop Supervisor. These type of projects will not be approved if they are for-profit or deemed inappropriate for a University setting. The available time to work on these projects will be limited to times when the facility has a low demand.

AREA SPECIFIC SAFETY RULES AND GUIDELINES

Overview

In addition to the facility safety rules, each fabricating area of the facility has specific safety practices tailored for that area and the tools and machines in that area. A user needs to be familiar with and abide by all safety rules for the area in which the user is working. Please note that if a user continues to engage in unsafe or dangerous behavior, the Shop Supervisor or Shop Monitor will ask the user to leave the facility and user privileges may be suspended or revoked. Developing and practicing safety minimize risk of injury for everyone. Shop Supervisors and Shop Monitors may have additional safety advice.

Dress Code

Dress code for all fabricating areas, including wood shop, metal shop, laser cutter / 3-D printer lab, CNC room, and assembly areas is the following:

- Long pants
- T-shirt or long sleeve
- Closed toe shoes

The following are examples of inappropriate clothing for the fabricating areas: sandals, flip-flops, high heels, tank top, loose fitting clothing, ¾ pants, shorts, scarves, ties. This is not an all-inclusive list. Shop Supervisors and Shop Monitors may point out other dress code violations. The dress code is part of minimizing risk of injury for the user.

Laser Cutter / 3-D Lab

**Information will be available during the next annual revision of the manual.*

CNC Room

** Information will be available during the next annual revision of the manual.*

Assembly Area and Outdoor Construction Area

1. All shop safety rules apply to these areas.
2. These are a no paint, no concrete, and no plaster zone without Supervisor approval.
3. Inform a Shop Supervisor or Shop Monitor when working in these areas.
4. Obey all signs posted in these areas.

GENERAL SAFETY RULES AND GUIDELINES

Wood and Metal Shops

The wood shop and metal shop have a vast number of hand tools, power tools, and machines to potentially use for an unlimited number of possible projects. With this equipment comes risk of minor to severe injury or death. Following the safety rules and guidelines, learning how to use the tools and equipment, and asking for help will make the shop a safe environment for all users.

1. Turn off cellphones. A cellphone can be a distraction that leads to accidents.
2. No earbuds or headphones.
3. No food or drink.
4. Always wear personal protective equipment. This includes the following:
 - a. Earmuffs or ear plugs
 - b. Safety glasses, safety goggles, spoggles, face shield, or a combination
 - c. Respirator or dust mask
 - d. Steel toed shoes, boots, or covers
5. Do not use the compressed air to clean yourself off.
6. Make sure there is another person present when working in the shop.
7. Do not work in the shop when sleep deprived, on medication that influences your judgement or dexterity, or while under the influence of drugs or alcohol.
8. Use the right tool for the right job.
9. If you have not been trained to use a tool or machine, it is your responsibility to ask the Shop Supervisor or Shop Monitor for training. Shop trainings will cover basic tools. It is impossible to cover all the tools and equipment in each shop.
10. Do not make any adaptations to equipment without consulting the Shop Supervisor. All guards must be left in place during operation.
11. If you have not worked with a specific material before, consult the fabrication lab supervisor for precautions, methods and instruction prior to beginning work.
12. Use a brush, or special tool for the removal of chips, shavings and debris. Do not use your hands to clean shavings or cuttings – they can be sharp!
13. Keep the work area free from debris, clean spills immediately and remove all sawdust and wood chips.
14. Keep your fingers clear from the point of operation of machines by using special tools and devices such as push sticks and paddles. Never use a rag near moving machinery.
15. Check power cords and plugs on portable tools before using them.

This list covers most of the safety rules and guidelines. These and others will be covered in the online safety training, the orientation tour, and the tool trainings. Shop Supervisors may communicate additional safety habits as situations arise. Please be open to hearing these and follow instruction.

TOOLS, MACHINES, AND EQUIPMENT RESOURCES

Operator's manuals for all equipment are located in the shop office. If a fabrication area does not have an office, the manuals will be located in the main office of the Fabrication Center. Users may request to look at an operator's manual as a reference. Reading an operator's manual is not a substitute for Tool Training. Fabrication Center copies of all operator's manuals cannot be taken out of the building.

CONCLUSION

There is a required procedure in place to become a Certified User and have access to the Fabrication Center. A Certified User has had basic training and is not an expert. Becoming accomplished at fabrication with a variety of materials and the equipment used to shape them, takes time, patience, hard work and guidance. The Fabrication Center's staff is available to assist and offer an advice

The user needs to understand the limits of the equipment, the materials, their own technical ability, and the size and scope of the project when considering work in the Fabrication Center. Projects tend to take longer than expected because of the learning curve in the shop areas, and generally that is simple the nature of fabrication and experimentation. Plan ahead and start early.

While this handbook covers numerous safety issues, it is not a replacement for time spent fabricating and practicing safe work habits. Ultimately, it is the responsibility of the user to know the risks of the fabrication environment and to follow all safety procedures as outlined here and in training(s).