



Shop/Studio Safety Program

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Table of Contents

Introduction	3
Purpose.....	3
Scope	3
Definition	3
Roles and Responsibilities	3
Hazard Matrix.....	4
Training	4
General Shop/ Studio Information	4
General Shop/ Studio Safety Training.....	4
Equipment Specific Safety Training.....	5
Monitoring	5
Room Access Control.....	5
Inspection.....	5
Rooms / Areas with Miscellaneous Equipment	5
Recordkeeping	6
Appendix A	7
General Shop/Studio Information	7
Appendix B	8
General Shop/Studio Safety Training.....	8
Appendix C	9
Equipment Specific Safety Training	9
Appendix D	10
Machine SOP	10
Appendix E	14
Shop/Studio Safety Program Matrix	14

Introduction

Shop/studio equipment can be found in many different places in a Higher Education Institution. Studio equipment are used by students and employees to complete various tasks. Shop/studio equipment has the potential to cause an injury or death if not used appropriately. The policy of Wilkes University to provide a safe working environment in these areas.

Purpose

The purpose of this program is to prevent injuries which may occur in a shop/studio environment. The information included in this document shall be used by supervisors to implement elements of studio safety in all aspects of the learning process. The program is oriented towards work in student and employee shop/studios, but many requirements also apply to work performed outside of formal shop/studio areas.

Scope

This Program applies to any Department that owns/operates locations where one or more of the following operations are routinely conducted by the Department's Faculty, Staff, Students, volunteers, or hired Contractors in facilities owned / controlled by the University:

- Metal working
- Carpentry
- Surface modification
- Painting and coating
- Glass work
- Electrical / electronic development / repair / maintenance
- Fiberglass / Plastics working
- Equipment Development / Building / Maintenance
- Model Building
- Vehicle Maintenance / Repair / Fabrication

Definition

Shop/Studio - Any workshop or workspace where materials are cut, shaped or otherwise manipulated using hand and/or powered tools and equipment.

Supervisor - Is defined as a Wilkes University employee who routinely oversees an area which is considered a Studio and has authority regarding equipment use.

Roles and Responsibilities

Supervisor

- We aware of all information included in this program and how it relates to their authority and responsibility.
- Insure all areas included in this program are implemented in the shop/studio.
- Investigate all incidents and injuries that occur in their shop/studio.

Environmental Health and Safety Committee

- Conduct an annual inspection in all shop/studio's on Wilkes University Campus.

User (Employee and Student)

- Comply with all provisions of this program.
- Attend and comprehend all required Shop/Studio Safety Program training.
- Report any unsafe studio conditions to Studio Supervisor.

Hazard Matrix

A hazard analysis of the most common types of equipment used in Wilkes University shop/studios has been completed. This analysis has resulted in various pieces of equipment being placed into different hazard categories (Appendix E). The type of equipment present within a given shop/studio will therefore determine the corresponding hazard category.

The matrix of this document details a number of shop requirements associated with each hazard category. These requirements have been established in order to provide a safe working environment within University shop/studios. The points included within the table include the following:

- Hazard Class
- Common examples
- Shop access control
- User Training

Training

The training requirements are determined by the hazard level category of the equipment to be used. "General Shop/Studio Information" must be reviewed and "General Shop/Studio Safety Training" must be provided to any individual who is operating any type of shop equipment. Specific equipment training must be provided if the shop equipment has been assigned a specific hazard level.

The supervisor of the studio/shop area is responsible for providing General Shop Information, General Shop Safety Training and Equipment Specific Training.

General Shop/ Studio Information

- A form (Appendix A) shall be used to provide basic information to the users of the shop/studio. It must be reviewed with shop users and visibly posted inside the studio/shop.

General Shop/ Studio Safety Training

- Training must be conducted for each employee/student who utilizes the Studio. It must be performed within each Studio the employee/student utilizes. (Appendix B)

Equipment Specific Safety Training

- This training must be conducted for each employee/student who uses equipment with a designated hazard level. It must be performed within each shop the employee/student utilizes. (Appendix C)

Studio/Shop safety training shall be provided to employees/students under the following circumstances:

- Changes in the workplace render previous training obsolete.
- Changes in the type of shop/studio equipment used render previous training obsolete.
- The operator has been observed using the equipment in an unsafe manner.
- The operator has been involved in an accident or near miss.

Monitoring

Acceptable monitoring of shop/studio activities is necessary in order to eliminate the potential for injury. Individuals who have been designated as monitors must be capable of identifying existing and predictable hazards in the Studio environment and have the authority to take immediate action to eliminate those hazards.

Supervisors are qualified to serve as monitors. Other staff employees, faculty members, and teaching assistants may also serve as shop/studio monitors. Education, training or past professional experience within a shop/studio environment must be used to determine if the individual is qualified as being a shop/studio monitor.

No monitoring is required when students are using Level 1 or 2 hazard equipment. A monitor must be present when students are operating Level 3-5 hazard equipment. The monitor must be present in the shop/studio to provide any assistance. (Appendix E)

Wilkes University employees may use any hazard category of shop/studio equipment without a monitor being present.

Room Access Control

For students, the doors to all shop/studios must be secured (key, electronic, etc.) unless appropriate personnel/supervision is present.

For employee shop/studio the door must be secured during non-business hour. Trained & authorized employees may enter and perform work. Students are not permitted in these areas.

Inspection

The Environmental Health and Safety Committee is responsible for completing a periodic inspection in each shop/studio area.

Rooms / Areas with Miscellaneous Equipment

Wilkes University has areas that are not considered Studio or Shop that contain the same types of equipment included in this program. Examples of such areas are as follows:

- A laboratory that contains a drill press.
- A general storage room which has a table saw.

Even though these areas are not classified as shop/studio, they are still obligated to comply with certain aspects of this program. This program shall be used as a reference to develop safe work practices within these areas. Specific sections of the program which apply are as follows:

- Training
- Room Access
- Hazard Matrix

Recordkeeping

Each supervisor is responsible for maintaining the following records for as long as the student utilizes the Studio:

- General Shop/Studio Safety Training
- Equipment Specific Safety Training

Appendix A
General Shop/Studio Information

Shop personnel:

1. The shop supervisor is _____
2. Contact information is _____

Emergencies:

1. Call 911
2. Location of the shop phone/s is: _____
3. Location of Safety Data Sheets (SDS) binder is: _____

Injury:

Life threatening (large cut, uncontrollable bleeding, amputation, and head injury) call 911.

Non-Life Threatening (small cut, burn, scrape, contusion, etc.)

Non-Employee – report to Studio Supervisor or instructor immediately

Employee – report to panel provider for medical treatment.

Emergency Equipment Location:

1. Emergency Evacuation Map _____
2. Fire extinguisher/s _____
3. First aid kit/s _____
4. Bio-Hazard Kit _____
5. Emergency shutdown _____
6. Eyewash/Shower _____

Appendix B
General Shop/Studio Safety Training

- If you're unsure about the operation of a tool, stop and seek help.
- All machines must be operated with the required guards in place.
- Personal Protective Equipment (PPE) requirements for this Studio/shop are as follows:
 - Safety glasses, and lab coats.
 - Additional PPE may be required by Studio supervisor.
- The procedure for obtaining PPE is_____.
- Clothing: At a minimum, close-toed shoes that cover the entire foot are required in the studio. All clothing and hair should be secured in such a way that it can't become entangled this includes jewelry.
- Housekeeping. You are not permitted to leave the shop until after cleaning all shop equipment and work areas has been completed. You must properly dispose of all debris and waste materials by placing them in the appropriate containers. Studio equipment must be placed in the proper storage location.
- Machines must be turned off when cleaning.
- Food and drink is only allowed in designated areas.
- Horseplay within Studio is strictly forbidden.
- Keep your fingers clear of the point of operation by using special Studio devices (push stick when using a table saw).
- Only Studio equipment owned by Wilkes University shall be used.
- No personal shop equipment allowed.
- Shop or homemade shop equipment may not be used.

Student/Employee:

Print: _____

Signature: _____ Date: _____

Shop Supervisor or Instructor

Print: _____

Signature: _____ Date: _____

Appendix C

Equipment Specific Safety Training

This form documents that an individual has been trained to operate certain Studio equipment.

The procedure is as follows:

1. The trainer must be a shop supervisor at Wilkes University.
2. The trainee shall go through General Studio Safety Training before Equipment Specific Training.
3. The trainer must provide an overview of the equipment and hands-on training regarding safe operation to the trainee.
4. Hands-on training may include, but is not limited to: completing a specific type of cut, completing a project, demonstrating proper setup of the equipment, shutting down the equipment, and/or demonstrating how to adjust equipment.

This training certification is permanent unless any of the following occur:

1. Changes in the workplace render previous training obsolete.
2. Changes in the type of equipment used render previous training obsolete.
3. The operator has been observed using the equipment in an unsafe manner.
4. The operator has been involved in an accident or near miss.

Initial and date all of the shop/studio equipment that the individual has been trained on and is permitted to operate.

<u>Tool</u>	<u>Trainer's Initials</u>	<u>Date</u>	<u>Tool</u>	<u>Trainer's Initials</u>	<u>Date</u>
3D Printer			Manual Brake		
Angle Grinders			Manual Shear		
Band Saw			Milling Machine (Standing)		
Belt/Disc Sander			Pottery wheels		
Bench Grinder			Printing Press		
Bug Mill			Radial Arm Saw		
Cordless Drill			Reciprocating Saw		
Drill Press (Standing)			Routers		
Enclosed CNC Machine			Slab Ruler		
Horizontal Band Saw			Table Saw		
Horizontal Surface Grinder			Vertical Band Saw		
Lathes (Metal)			Welding/Brazing		
Lathes (Wood)			Other		

<u>Student/Employee:</u> Print: Sign:	<u>Trainer:</u> Print: Sign:
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Date:	Date:
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Appendix D
Machine SOP

Bench Grinder

Personal Protective Equipment

- ✓ Wear proper apparel, no loose fitting clothing or jewelry
- ✓ Safety glasses or goggles
- ✓ Ear plugs or muffs
- ✓ Shop apron



Setup Activities

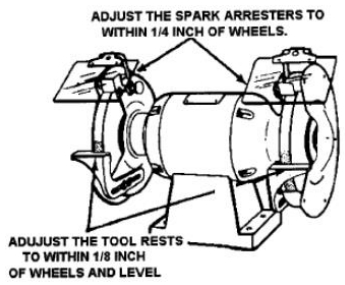
- ✓ Inspect work area and confirm adequate lighting Grinder must be securely mounted to prevent it from tipping
- ✓ Inspect power tool make sure it is in good condition
 - Inspect wheels for cracks and chips
 - Make sure the machine guard is in place
 - Check power cord for exposed wiring
 - Do not use if there are any issues
 - Report any issues to the Lab Manager or Instructor
- ✓ Inspect extension cord
 - Check cord for exposed wiring
- ✓ Adjust tool rest and guarding (See Below)

Safe Operation

- ✓ Maintain tool with care
 - Dress grinding wheel
- ✓ Avoid accidental starting
- ✓ Check the machine speed against the established max safe operating speed marked on the replacement wheel
- ✓ When re-installing grinder discs, make sure to install the correct size and RPM.

After Operation

- ✓ Turn off machine
- ✓ Ensure wheel has stopped
- ✓ Clean area



Metal Band Saw

Personal Protective Equipment

- ✓ Wear proper apparel, no loose fitting clothing or jewelry
- ✓ Safety glasses or goggles
- ✓ Ear plugs or muffs
- ✓ Shop apron



Setup Activities

- ✓ Inspect work area and confirm adequate lighting
- ✓ Inspect power tool to confirm it is in good condition
 - Confirm the machine guard is in place
 - Check power cord for exposed wiring
 - Do not use if there are any issues
 - Report any issues to the Lab Manager or Instructor
- ✓ Confirm all adjusting elements on saw are firmly tightened before starting
- ✓ Complete any necessary machine adjustment prior to starting.
 - Adjustable slide guard
- ✓ Inspect workpiece for metal objects and remove (nails)

Safe Operation

- ✓ Maintain tool with care
 - Blade sharp
- ✓ Avoid accidental starting
- ✓ Do not force the workpiece in the band saw
- ✓ Clamp material in vice before starting the blade.

After Operation

- ✓ Turn off machine and dust collector
 - ✓ Ensure blade has stopped
 - ✓ Clean area (metal shavings)
-

Lathe Machine

Personal Protective Equipment

- ✓ Wear proper apparel, no loose fitting clothing or jewelry
- ✓ Safety glasses or goggles
- ✓ Ear plugs or muffs
- ✓ Shop apron



Setup Activities

- ✓ Inspect work area and confirm adequate lighting
- ✓ Inspect power tool to confirm it is in good condition
 - Ensure the machine guard is in place
 - Check power cord for exposed wiring
 - Do not use if there are any issues
 - Report any issues to the Lab Manager or Instructor
- ✓ Confirm all adjusting screws on saw are firmly tightened before starting
- ✓ Complete any necessary machine adjustment prior to powering up.
- ✓ Inspect workpiece for metal objects and remove (nails).
- ✓ Use ventilation system to control airborne wood dust.

Safe Operation

- ✓ Maintain tool with care
- ✓ Avoid accidental starting
- ✓ Do not force the tool- use the correct tool for the work task
- ✓ Ensure chuck is at the correct speed on the material being cut.

After Operation

- ✓ Turn off machine
 - ✓ Ensure metal chuck has stopped completely
 - ✓ Clean area metal/wood shavings
 - Equipment must be shutdown
-

Drill Press

Personal Protective Equipment

- ✓ Wear proper apparel, no loose fitting clothing or jewelry
- ✓ Safety glasses or goggles
- ✓ Ear plugs or muffs
- ✓ Shop apron



Setup Activities

- ✓ Inspect work area and confirm adequate lighting
- ✓ Inspect power tool to confirm it is in good condition
 - Confirm the machine guard is in place
 - Check power cord for exposed wiring
 - Do not use if there are any issues
 - Report any issues to the Lab Manager or Instructor
- ✓ Confirm all adjusting screws on saw are firmly tightened before starting
- ✓ Complete any necessary machine adjustment prior to powering up.
- ✓ Use clamps to secure and support workpiece
- ✓ Inspect workpiece for metal objects and remove (nails).

Safe Operation

- ✓ Maintain tool with care
- ✓ Avoid accidental starting
- ✓ Do not force the tool- use the correct tool for the work task.
- ✓ Do not exceed the speed for the type of drill bit being used.

After Operation

- ✓ Turn off machine
 - ✓ Ensure bit has stopped
 - ✓ Clean area (wood/metal shavings)
-

Appendix E
Shop/Studio Safety Program Matrix

Device Class	1	2	3	4	5
Examples	Manual hand tools	Jig saw	Circular saw Angle grinders	Lathe (Wood) Bench grinder Band saws	Radial arm saw Drill press Lathe (Metal) Milling Machines
Shop access control	Permission shop supervisor	Permission shop supervisor	Permission shop supervisor	Permission shop supervisor	Permission shop supervisor
Tool use	Performed in shop	Performed in shop	Performed in shop	Performed in shop	Performed in shop
User Training	Introduction of shop safety Review wall postings	Introduction of shop safety Review wall postings	Introduction of shop safety Review wall postings Demonstrate proficiency	Introduction of shop safety Review wall postings Demonstrate proficiency	Introduction of shop safety Review wall postings Demonstrate proficiency