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**STANDARD OPERATING PROCEDURE (SOP)
SAFETY PROCEDURE IN METAL CRAFT STUDIO LABORATORY**

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INVENTORY MANAGEMENT

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1. OBJECTIVE

This SOP aims to protect laboratory equipment from damage due to improper use and to safeguard users from potential hazards that may occur, either intentionally or unintentionally, during their activities in the laboratory.

2. SCOPE

This SOP applies to the occupational safety and health aspects that must be prioritized during activities conducted in the Metal Craft Studio Laboratory within the Faculty of Language and Arts (FBS) at State University of Surabaya.

3. REFERENCE

- 3.1. Law No. 1 of 1970 on Work Safety
- 3.2. Government Regulation No. 50 of 2012 on Occupational Health and Safety Management Systems (SMK3)
- 3.3. Government Regulation No. 88 of 2019 on Work Safety
- 3.4. Strategic Plan Document of Surabaya State University
- 3.5. Strategic Plan Document of Faculty of Language and Arts

4. DEFINITIONS

- 4.1 Hazard: Any source, situation, or action with the potential to cause harm or injury.
- 4.2 Poor Health: Identifiable physical or mental conditions caused or exacerbated by work activities or environments.

5. RESPONSIBLE PARTIES

- 5.1 Head of General Affairs and Equipment Subdivision: Responsible for ensuring the availability of occupational health and safety (K3) equipment and implementing K3 regulations in the FBS environment.

6. GENERAL REQUIREMENTS

- 6.1 Periodic safety checks will be carried out by the Head of General Affairs and Equipment Subdivision and reported to the Deputy Dean for General Affairs and Finance.
- 6.2 The results of these inspections will be compiled into a report for the laboratory lecturer in charge, the facility coordinator, and the administration manager.

7. PROCEDURE DESCRIPTION



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7.1 Rules for Using the Metal Craft Studio:

a. Registration and Permission:

- All users must log their name, usage time, and purpose in the studio logbook.
- Ensure that the use of tools and equipment, such as bench grinders, electric welding machines, drill presses, hammers, sheet metal shears, files, hand grinders, heating tools, and pliers, is approved by the studio manager or technician.

b. Safety at Work:

- Always wear Personal Protective Equipment (PPE), such as safety goggles, masks, heat-resistant gloves, and aprons, especially when using tools that generate heat, sparks, or sharp edges.
- Maintain proper ventilation in the studio, particularly when working with welding machines or heating tools, to avoid exposure to harmful fumes.
- Never leave active machinery, such as grinders or welding equipment, unattended during operation.

c. Maintenance and Cleanliness:

- Keep the work area clean and organized. Dispose of scraps, dust, and metal shavings in designated containers.
- Avoid moving or rearranging heavy equipment, such as bench grinders or drill presses, without prior approval from the studio manager.

7.2 Tool Usage Guidelines:

a. Using Bench Grinders and Hand Grinders:

- Inspect grinding wheels for cracks or damage before use.
- Adjust safety guards to shield against sparks and debris.
- Power off and wait for the grinder to stop spinning completely before cleaning or moving.

b. Using Electric Welding Machines:

- Inspect cables and connections before use to ensure they are in good condition.
 - Always wear a welding helmet and heat-resistant gloves during welding.
 - Switch off the machine and store electrodes safely after use.
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- c. Using Drill Presses:
 - Secure workpieces with clamps or vices to stabilize them during drilling.
 - Select drill bits that are appropriate for the material and task.
 - Clean up metal shavings and debris after finishing.
 - d. Using Hammers and Files:
 - Use the correct type of hammer for specific tasks, such as shaping or riveting.
 - File metal edges in smooth, single-direction strokes to avoid uneven surfaces.
 - Rinse and dry tools after use to prevent corrosion.
 - e. Using Sheet Metal Shears:
 - Check the sharpness of blades for clean cuts.
 - Operate shears carefully, keeping fingers clear of the cutting area.
 - Clean and store shears in a safe place after use.
 - f. Using Heating Tools and Pliers:
 - Heat metals to the appropriate temperature for bending or shaping.
 - Handle hot materials with pliers or other heat-resistant tools to prevent burns.
 - Allow heating tools to cool completely before cleaning or storing them.
 - g. Tool Maintenance and Cleanliness
 - Regularly clean and inspect tools, including grinders, welding equipment, drill presses, and hand tools, after each use to ensure their longevity.
 - Perform routine maintenance checks on larger equipment, such as bench grinders and drill presses, to identify any potential issues.
 - Report damaged or worn tools to the studio manager for repair or replacement.
 - h. Safety Protocols for Metal Craft Processes
 - Welding and Heating:**
 - Perform welding in well-ventilated areas with spark shields to ensure safety.
 - Avoid direct contact with heated materials, allowing them to cool sufficiently before handling.
 - Drilling and Grinding:**
 - Stabilize workpieces securely during grinding or drilling.
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- Use appropriate machine speeds to match the material and avoid damage.

Material and Waste Management:

- Store raw metal sheets and rods in designated storage areas.
- Dispose of metal scraps and waste in recycling containers.

7.3 Tool Loan Procedure

- Borrow tools in accordance with the procedures set by the supervising lecturer.

7.4 Studio Cleaning Procedure

- Clean and maintain tools before and after use.
- Ensure borrowed tools are ready for use in subsequent classes.
- Return tools following the procedures set by the supervising lecturer.

7.5 Damage and Loss Procedures

- Students are fully responsible for the tools they borrow or use.
- Any damage resulting from improper use must be repaired or replaced by the student.
- If a borrowed tool is lost (including its accessories), the student must replace it with an identical item.

7.6 Sanctions for Violationsthes:

- Verbal or written warning.
- Immediate expulsion from the class.
- Grade deduction.
- Failure to complete the course requirements.

8. CLOSING

This SOP is to be implemented as required to ensure work safety in the Metal Craft Studio Laboratory.
