# Department of Visual Arts
# Safety Manual

# PREFACE

This safety manual for the Department of Visual Arts is designed to familiarize faculty, staff, and students with relevant environmental health and safety information necessary for visual arts studio practices. The contents of this manual are specific to the University of Louisiana at Lafayette's Department of Visual Arts areas of concentration.

Many health and safety program areas are described only briefly because the UL Lafayette Office of Environmental Health and Safety offers detailed policies and procedures listed on their website: http://safety.louisiana.edu/resource-center/policies-procedures. References to these documents will be provided throughout the Department of Visual Arts Safety Manual.

Requests for additional information should be directed to the UL Lafayette OEHS:

Parker Hall
310 E. Lewis Street
Lafayette, LA 70503
337-482-1840

| **Nature of Problem** | **Department** | **Phone #** |
|---|---|---|
| Medical Emergency | 911 University Police | 911 |
| Fire | 911 University Police | 911 |
| Criminal Activity | 911 University Police | 911 |
| Motor Vehicle Accident | 911 University Police | 911 |
| Accidental Chemical Ingestion | Poison Control Center | 1-800-256-9822 |
| Hazardous Materials Problems | OEHS | 482-5357 |
| Unsafe Conditions | OEHS or Departmental Safety Coordinator | 482-5357 |
| Electrical | Facility Management | 482-6440 |
| Plumbing | Facility Management | 482-6440 |
| AC/Heating | Facility Management | 482-6440 |
| Telephone | Info & Media Networks | 88# |
| Computer Networks | Info & Media Networks | 88# |

# INTRODUCTION

There are aspects of each visual arts concentration that can bring you into contact with hazardous materials, tools, and processes that require proper safety procedures. With the correct instruction and attention to your work, you will be able to safely navigate your studio practices.

To follow the guidelines laid out in this manual you will need to read all information enclosed, know what you're dealing with before you start working in an area where hazardous materials or processes are used, and follow all recommended precautions. This information is here to keep you safe and healthy. By misusing studio equipment and not following these guidelines you can expose yourself to serious health risks, and in addition lead to regulatory fines for the university.

# RESPONSIBILITIES

The University of Louisiana at Lafayette Office of Environmental Health and Safety serves the University community by providing technical support, information and training, consultation and periodic audits of environmental health and safety practices and regulatory compliance.

It is the responsibility of Department of Visual Arts faculty to ensure that students receive and understand relevant safety training for potentially hazardous tools, chemicals and working practices. It is also the faculty's responsibility to implement the safe work practices and hazard control measures outlined in this safety manual.

Both students and faculty are responsible for obtaining safety training and following general and concentration specific safety precautions delineated in this manual. Students and faculty are responsible for reporting any injuries, hazardous material spills, unsafe conditions or work practices that occur in Fletcher Hall or the Visual Arts Annex. Ignoring these safety rules can result in expulsion from the studio or other disciplinary actions.

# EMERGENCY RESPONSE PROCEDURES

**Dial 911 on any campus phone to report emergencies.**
Any accident should be reported immediately. First aid should be applied when needed for immediate, temporary care given to the victim of an accident or sudden illness until the services of a physician can be obtained. (OEHS, 8.31)

**Fire Prevention** (OEHS 8.32)

- Be aware of any ignition sources like open flames, sparks, heating elements, spark gaps (motors, switches, friction, static).
- Do not use flammable liquids in the presence of ignition sources, and vice versa.
- Flammable liquids give off vapors, which may burn or explode. Be sure they are properly stored and labeled. Report spills immediately.
- Do not overload electrical circuits, and report ANY electrical malfunctions immediately to faculty members.
- Good housekeeping is a key element in fire prevention, and proper standards must be maintained in the studio.
- All flammable material must be stored in a Flammable Storage Cabinet. This includes materials like paint, paint thinner, alcohol, acetone, spray paint, etc.
- **If your clothing catches fire, drop to the floor and roll to smother the fire.**

**In case of a fire:**

1. If possible pull the nearest fire alarm station
2. Begin evacuating the building using the nearest stairwell. Evacuation routes should be posted on the wall of each studio. **Do not use the elevator.**
3. Once evacuated, dial 911.
4. Do not re-enter the building until told it is safe by the UL police or fire department officials.

**Hazardous Material Spill**

Spills of hazardous materials should be confined in a safe manner when possible. Spill containment techniques are outlined in Safety Data Sheets (SDS) that are available in each classroom. In case of a hazardous material spill:

1. Alert others in the area affected and evacuate if necessary.

2. Review the SDS or the container label for information on protective equipment and handling procedures.
3. If the spill cannot be handled safely by VIAR Department personnel, notify UL police by dialing 911 or contact OEHS 482-5357
4. Report the following details:
    - Location of the spill
    - Chemical or product name
    - Approximate quantity spilled
    - Any other relevant information

**Chemical Exposure**

All cases of chemical exposure should be reported to faculty. The following procedures should be followed if exposed to hazardous chemicals.

- **Chemicals on Skin**
    1. Immediately flush the affected area with water for a minimum of 15 minutes. Remove any contaminated clothing, jewelry and equipment.
    2. When medical attention is needed call **911** and/or the Poison Control Center **1-800-256-9822.**
    3. Review the SDS for any delayed effects.
- **Chemicals in Eyes**
    1. Immediately flush eyes with water for a minimum of 15 minutes. Hold eyelids open and rotate eyes to fully flush affected surfaces. Use of eyewash stations are preferable for hands free operation.
    2. If wearing contact lenses, remove as soon as possible while rinsing.
    3. When medical attention is needed call **911** and/or the Poison Control Center **1-800-256-9822.**
    4. Review the SDS for any delayed effects.

    **Chemical Inhalation**
    1. Provide fresh air
    2. If symptoms persist, call **911** and/or the Poison Control Center **1-800-256-9822.**
    3. Review the SDS for any delayed effects

**Injury or Illness** (OEHS, 1.4)

If someone is injured while working, visiting or attending classes call 911 immediately. All cases should be reported as described below.

**Employees** who suffer any work-related injury or illness must report the incident to their supervisor immediately and complete an accident reporting form entitled **DA2000** available from the departmental safety coordinator, the OEHS office or website:
http://www.safety.louisiana.edu/sites/safety/files/Sec01%20Introduction%209th%20ed_0.pdf

# WASTE MANAGEMENT AND DISPOSAL

Several types of waste are generated in visual arts processes: solvents, oil-based paints, ceramic glaze, photographic processing chemicals, etc. Many of these wastes are considered hazardous waste by the U.S. Environmental Protection Agency (EPA) and require special handling. Hazardous wastes should be collected and disposed of via commercial disposal companies; they may not be poured down the drain or placed with regular trash. **Hazardous waste disposal is arranged through the OEHS.**

In order to minimize hazardous waste issues, consider the following:

- Don't purchase more of a material than you expect to use in the foreseeable future. Costs of disposal can exceed bulk purchase savings.
- Substitute with a less hazardous material whenever possible.
- Make sure all chemical and waste containers are properly labeled.
- Keep chemical and waste containers closed when not in use.

# GENERAL SAFETY INFORMATION

**Electrical Safety** (OEHS, 8.33)

All electrical work and repair should be performed by Facility Management (482-6440) or email workorder@louisiana.edu

- Do not attempt to repair an electrical circuit of any kind.
- If an activity you are doing trips an electrical breaker, do not attempt to reset the breaker. Report this problem to Facility Management.

- Do not use an electrical receptacle or switch whose faceplate is missing or displays burn marks
- Unplug and do not use any electrical device that emits a burnt odor.
- Do not use any device whose electrical cords are frayed or cut.
- Do no use receptacle splitters or other devices that are designed to allow multiple devices to be plugged into one receptacle. Power strips for computers are acceptable provided they are equipped with a circuit breaker or surge protection device. Only one power strip should be used in any wall receptacle – attaching multiple power strips in line with one another is unsafe and prohibited.
- Extension cords cannot be used as a substitute for fixed or permanent wiring.
- Extension cords cannot be used inside walls, above ceilings, across floors in the path of walkways, or along doorways and windows.

**Proper Lifting Techniques** (OEHS, 8.34)

Back injuries are one of the most prevalent injuries in the workplace. Improper lifting techniques can be attributed to a significant number of back, neck, and other injuries throughout the university. Follow these guidelines when lifting heavy objects (more than 10 lbs.)

- Lift only loads you can safely handle.
- Establish good footing on level ground.
- Keep the load close to the body.
- Bend at the knees and lift smoothly by straightening your legs while keeping your back straight.
- Avoid twisting actions with your back and instead move your feet to rotate.
- Reverse the procedure to set the object down.
- If necessary, wear a protective belt when lifting.

**Hand Tools** (OEHS, 9.23)

- When using hand tools use the appropriate personal protective equipment.
- Inspect tools before use to make sure they are in good condition. Worn or defective tools should be reported to faculty to be repaired or discarded.
- Use the right tool for the job. A wrench is not a hammer and a screwdriver is not a chisel.
- When using a knife/x-acto blade/box cutter, cut away from the body and keep your body out of the direction of the blade.

- Dispose of dull and broken blades in a designated, puncture resistant “Sharps” container. **DO NOT THROW BLADES IN THE GARBAGE**.
- Store tools safely. Sharp edges should be protected or enclosed to prevent accidental contact.
- Keep cutting tools sharp. Dull tools can cause you to force their action and potentially lose control of the tool.
- Maintain a good grip and stand in a balanced position to avoid sudden slips. Avoid awkward body postures.

**Compressed Gas Tanks** (OEHS, 9.24)

- Compressed gas tanks are required to be secured in an upright position at all times.
- Tanks (including empty tanks) should be secured to prevent tipping with an appropriate stand, chain, or strap.
- Valve covers should remain in place until a regulator is attached.
- When moving tanks, keep them in an upright position by using a cart or hand truck. Do not roll or drag cylinders. Avoid dropping cylinders or allowing them to strike one another.
- Use the appropriate fittings and regulators for each type of gas; **OXYGEN AND GAS FITTINGS ARE NOT INTERCHANGABLE.**
- Cylinders containing flammable gasses like acetylene or propane must be stored separately from oxidizers (oxygen) by either a 20-foot distance or by a non-combustible 5-foot high barrier. The only exception to the rule is an oxy-acetylene welding cart.

**Personal Protective Equipment and Clothing (PPE)** (OEHS, 9.21)

Personal Protective Equipment (PPE) is anything that is used to protect the human body from the dangers of hazards. PPE is used to protect a person’s eyes, face, ears, head, extremities, respiratory system, and other parts of his or her body. Statistics and other data show that failure to use PPE is a leading cause of accidents.

Every employee and student is responsible for using PPE whenever a task or job requires it. Faculty and Departmental Safety Coordinators are responsible for making sure that PPE is available and in good working condition. Whenever necessary, departments are required to provide PPE to its employees and students. Departmental supervisors must ensure that all employees and students know how to use PPE properly. Whenever a student provides their own PPE,

then faculty are responsible for inspecting it and assuring its adequacy and sanitation. Employees who need PPE but don't know where to get it can contact the EH&S office for assistance or order directly through the Central Receiving Office in Facility Management.

**Eye and Face Protection**

The University shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation. Assessments document when and where eye and face protection is required. The personal protective eye and face protection must meet ANSI Z-87.1- 1989 specifications, as required by OSHA.

The University shall ensure that each affected employee uses eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g. clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

The University shall ensure that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards wears eye protection that incorporates the prescription in its design, or wears eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

- Eye and face PPE is required for all persons that are exposed to hazards that include flying objects, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, potentially injurious light radiation, or dust.
- All eye PPE must conform to ANSI z87.1-1989.
- Whenever hazards from flying objects exist, eye and face PPE must provide side protection to prevent these objects from entering the eye indirectly.
- Persons who wear prescription eyeglasses must use PPE that can be worn over these prescription glasses without disturbing the proper position of the prescription glasses.
- Persons who use contact lenses must also use proper eye and face PPE. Contact lenses are not a form of PPE.
- Persons who are exposed to injurious light radiation shall use eye and face PPE that incorporates filter lenses with an appropriate shading capability necessary to remove the danger of light radiation.

- Eye and face PPE shall be inspected regularly and, if inadequate, disposed and replaced.
- Any modification of eye and face PPE is prohibited.
- Eye and Face protection must be cleaned regularly with a wet towel or glass cleaner and properly dried before wearing. Scratch glasses, goggles or face shields must be replaced as necessary.

**Hearing Protection**

The University shall ensure that each employee exposed to noise levels that exceed 85 decibels for an extended period must wear approved earplugs or earmuffs while working with that equipment.

- Persons shall wear hearing PPE whenever they are exposed to noises above 85 decibels as measured on the A-scale of a standard sound meter.
- All hearing PPE must conform to ANSI 53.19.
- Disposable hearing PPE may not be shared and must be replaced or cleaned daily to ensure sanitation.
- Permanent hearing PPE must be inspected regularly and, if inadequate, disposed and replaced.
- Any modification of hearing PPE is prohibited.

**Hand and Foot Protection**

The University shall ensure that each affected employee uses appropriate hand and foot protection when exposed to injury from potential skin absorption hazards, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures or amputations.

There is no one glove that can protect employees from all hazardous exposure to the hands. Employees and Supervisors are to contact the EH&S office for guidance on proper selection of hand protection. Assessments document when and where hand and foot protection is required.

Note: More information on Hand PPE can be found in the Blood Borne Pathogens section (OEHS, 12).

- Hand PPE shall be worn by persons who are exposed to hazards such as those from skin absorption of harmful substances, severe cuts or

lacerations, severe abrasions, punctures, chemical burns, thermal burns, and harmful temperature extremes.

- Hand PPE shall be worn by persons while working on moving machinery such as drills, saws, grinders, or other rotating equipment.
- Hand PPE must be inspected regularly and, if inadequate, disposed and replaced. No holes or worn hand and footwear will be allowed.
- Foot PPE or appropriate shoes shall be worn by persons who are exposed to hazards such as falling objects, rolling objects, piercing objects, and electrical hazards. Open toe shoes are not acceptable in any of these applications. Studio environments do not allow open toe shoes due chemical exposure.
- Any modification of hand or foot PPE is prohibited.
- Employees required to wear toe protective gear must meet ANSI Z41-1991 standards, as required by OSHA.

**Protective Clothing and Personal Hygiene**

- Protective clothing shall be worn by those persons who are exposed to hazards such as solid and liquid chemicals, high or low temperatures, open flames, and large amount of ultraviolet light.
- When persons are exposed to moving or rotating equipment or machinery, protective clothing must fit snugly.
- Shirttails shall be tucked in and long sleeves shall be buttoned or otherwise secured to prevent being caught in moving or rotating machinery.
- Long Hair shall be kept in a fashion that does not allow it to become caught in moving or rotating machinery.
- Jewelry should not be worn when operating industrial equipment.

**Working Alone/Unsupervised**

Students should not work in shop areas without supervision until they have experience and training to do so. Do not work alone in the studio while using hazardous equipment. Building security is in place for your protection. Do not prop open doors or windows in Fletcher Hall or the Visual Arts Annex.

**General Safety Summary**

1. Know your materials and hazards by reading labels and reviewing Safety Data Sheets (SDS). Use the safest materials when possible:

- Water-based materials instead of solvent based.
- Avoid using toxic metals like lead and cadmium.
- Use wet sanding techniques instead of dry to minimize dust production.
- Apply materials by brush instead of spraying.
- Choose products that don't create dust and mist. Avoid using materials in powder form. Only use aerosols with proper ventilation

2. Keep your work area clean.
   - Do not eat or drink in the studio wherever there is a potential for chemical exposure.
   - Wash your hands with soap and water after using hazardous materials.
   - Never hold brushes or tools in your mouth.
   - Clean dusty surfaces with a wet mop or HEPA filtered vacuum.
   - Clean up spills and wet floors immediately.
   - Store tools properly when not in use and keep them in good working order.
   - Keep your work area clean and unobstructed.
3. Know how to use emergency equipment and where to evacuate during an emergency.
   - Eyewash stations
   - Fire alarm pull stations, fire extinguishers, designated evacuation areas.
   - Emergency Phones
   - Injury response procedures
   - Location of Safety Data Sheets (SDS)
4. Handle chemicals and supplies properly
   - Choose appropriate containers. Don't put chemicals in empty food or beverage containers.
   - Don't store incompatible chemicals together.
   - Safely store materials to avoid falls and other injuries.
   - Label all chemical containers with their contents.
   - Cover containers when not in use to prevent evaporation of hazardous materials.
   - Transfer materials carefully to avoid splashing or generating dust.
5. Wear appropriate personal protective equipment (PPE). Refer to your studios safety guides or instructors recommendations.
   - Tie back long hair; do not wear jewelry or loose clothing around mechanical equipment.
   - Minimize exposed skin when using hazardous chemicals or hot objects.

- Shoes are required in the studio. Sandals and open shoes are prohibited in some studios, and whenever you are working with heavy, hot, or hazardous materials.
- Store PPE properly and keep it readily accessible.

6. Work Responsibly
   - Follow the instructions of you professor.
   - Only use equipment you have been authorized to use. If you haven't been trained on it, don't use it.
   - Follow posted instructions in the studio; ask your instructor if you have questions.
   - Report unsafe studio conditions like damaged equipment or hazardous environments.
   - Recognize your limits. Do not work if you are tired, unable to focus, or under the influence of drugs, alcohol or medication.
   - Be considerate of your studio mates. Work safely and don't put others at risk. Communicate any chemical or physical hazards you see or are working with in the studio.

# STUDIO SAFETY HAZARDS AND PRECAUTIONS

1. Art Education
2. Ceramics
3. Computer Art & Animation
4. Graphic Design
5. Metalwork & Jewelry
6. New Media & Digital Art
7. Painting
8. Photography
9. Printmaking
10. Sculpture

# ART EDUCATION

The primary hazards can vary greatly based on materials used. It is important to read the Safety Data Sheets (SDS) in order to better understand if they are safe to use in the classroom and with what developmental groups. Most art materials approved for public schools are relatively safe when used as intended. Health or environmental impact generally comes from the improper use of these materials.

| Activity | Hazards | Precautions |
|---|---|---|
| Paint | · Some solvents and vehicles used in paints can evaporate quickly and contaminate the air creating an inhalation hazard.<br>· Some solvents can be absorbed through the skin and can cause dermatitis with prolonged exposure. | · Use water based paints whenever possible.<br>· Be sure the studio is well ventilated.<br>· Do not spray anything in the studio.<br>· Read the manufacturers label and SDS for all materials. |
| Drawing materials | · Dust from charcoal sticks, pastels, etc. can aggravate asthma symptoms.<br>· Toxic pigments can be hazardous when inhaled. | · Don't blow off excess pastel or charcoal dust.<br>· Wet wipe or mop dusty surfaces. |
| Cutting | · Bodily injury can occur from the misuse of cutting tools. | · Practice safe handling for sharp implements.<br>· Store sharp objects with blades covered when not in use. |
| Clay | · Wet clay is a growth medium for mold and other microorganisms, which can aggravate pre-existing medical conditions like asthma. | · Keep the studio clean and avoid eating and drinking in the studio.<br>· Wash hands after working and practice good hygiene. |

# CERAMICS

Hazards associated with ceramics can be divided into three main groups: preparing and molding the clay, glazing, and firing the clay. There is also a concern about lead and other metals leaching into food and drink from pottery fired with certain glazes. Review Safety Data Sheets (SDS) for materials you use, particularly glazing compounds. The following table describes the potential hazards associated with different ceramic processes

| Activity | Hazards | Precautions |
|---|---|---|
| Mixing dry clay | · Clay contains crystalline silica, which if inhaled over the course of many years can cause silicosis.<br>· Talc added to clay may be contaminated with asbestos or “asbestos-like” fibers. | · Purchase pre-mixed clay.<br>· Wear a respirator when mixing clay.<br>· Use asbestos-free talc.<br>· Regularly wet mop, hose down, or vacuum (with HEPA filter) the studio. |
| Handling wet clay | · Wet clay is a growth medium for mold and other microorganisms, which can aggravate pre-existing medical conditions like asthma. | · Keep the studio clean and avoid eating and drinking in the studio.<br>· Wash hands after working and practice good hygiene. |
| Glazes | · Glazes may contain toxic metals such as lead, cadmium, chromium, uranium, and arsenic. | · Use glazes that replace these materials with safer substitutes.<br>· Wear gloves, respirator and use local exhaust ventilation.<br>· Avoid spraying techniques that will aerosolize the glaze. |
| Firing Kiln | · Toxic gases and fumes may be emitted during the firing process as a byproduct of combustion.<br>· Infrared radiation emanates from hot (glowing) fired ceramics and with prolonged exposure can cause cataracts.<br>· Unloading hot objects from a kiln can cause burns. | · Use exhaust ventilation.<br>· Wear shaded lenses when looking into a kiln.<br>· Wear heat resistant gloves when handling hot objects.<br>· Do not store flammable materials near kilns. |

# COMPUTER ART & ANIMATION

The primary hazards associated with computer use are visual and musculoskeletal stresses from prolonged use of the computer. Proper design of the computer work area with the use of ergonomically designed equipment (Mouse, keyboard, chair) can help avoid potential problems. Good working practices and maintaining a neutral body posture are also important techniques you can use to prevent these problems from happening.

| Activity | Hazards | Precautions |
|---|---|---|
| Computer Use | · Musculoskeletal disorders such as carpal tunnel, neck strain, etc. | · Maintain a neutral body position. *<br>· Place your keyboard and monitor directly in front of you.<br>· Adjust your chair height and arrange mouse and keyboard to achieve a neutral wrist posture.<br>· Use a mouse pad with a wrist rest.<br>· Move around regularly, get up, stretch, and walk around. |
| | · Eyestrain from improper viewing distances, glare or reflection on the screen. | · Place your monitor perpendicular to windows.<br>· Tilt screen slightly to avoid glare from lights and windows.<br>· Position monitor so top line of screen is at or below eye level.<br>· Place monitor directly in front of you and at least 20” from your eyes.<br>· Periodically clean monitors.<br>· Do not use bifocals with computer monitors. |
| | · Electrical hazards | · Use only power cords provided in the DMRC. |

* Keep hands, wrists and forearms straight and in-line with your body, roughly parallel to the floor. Elbows remain close to your torso. Shoulders should be relaxed with your upper arms hanging normally to your side. Head is level or bent slightly forward and aligned with your torso. The chair should support your back and legs while avoiding pressure on your thighs. Your feet should be supported by the floor or footrest.

# GRAPHIC DESIGN

The primary hazards associated with graphic design are similar to computer use in Computer Art & Animation. Proper design of the computer work area with the use of ergonomically designed equipment (Mouse, keyboard, chair) can help avoid potential problems. Good working practices and maintaining a neutral body posture are also important techniques you can use to prevent these problems from happening. Additionally, there are sharp tool and chemical safety concerns associated with Graphic Design.

| Activity | Hazards | Precautions |
|---|---|---|
| Computer Use | · Musculoskeletal disorders such as carpal tunnel, neck strain, etc.<br>· Eyestrain from improper viewing distances, glare or reflection on the screen.<br>· Electrical hazards | · See precautions listed in Computer Art & Animation on page 16. |
| Cutting paper, cardboard, foam and other construction materials | · Cuts from X-Acto and utility knifes are the most common injury in the Department of Visual Arts. | · Keep your hands out of the cut line and back from the edge of any guides you may be using.<br>· Place the workpiece on a tabletop protected with a cutting mat and cut downward toward the table.<br>· Hold your workpiece behind the cut you are making or use a clamp.<br>· Use a sharp blade.<br>· Store and transport cutting tools with blades covered or retracted.<br>· Dispose of old blades in a designated “Sharps” container. **Never in the trash.** |
| Gluing | · Fumes from glues and spray adhesives are toxic. | · Work in a properly ventilated area, use the woodshop spray booth for spray adhesives. |

# METALWORK & JEWELRY

The hazards associated with metalwork depend on the type of work performed and methods used. Artists may solder, form, forge and cast metal. Review Safety Data Sheets (SDS) for material composition and safety guidelines. Students must observe demonstrations of all tools and processes before using them in the Metalworking studio. The table below highlights the primary hazards of Metalwork & Jewelry.

| Activity | Hazards | Precautions |
|---|---|---|
| Soldering | · Fumes generated during the soldering process can contain zinc, lead, fluoride and other hazardous substances | · Always use ventilation while performing these processes.<br>· When necessary use a respirator and safety glasses. |
| Manipulating metal | · The use of saws, hammers, and power-tools can cause bodily injury when not used properly. | · Observe all guidelines listed in the section Personal Protective Equipment (PPE) pg. 8-11.<br>· Close toed shoes and safety glasses are required to work in the studio. |
| Metal casting | · Plaster investment contains silica, which if inhaled over the course of many years can cause silicosis.<br>· Molten metal and hot equipment can cause severe burns.<br>· Toxic fumes are released during the melting of certain metals. | · Always wear a respirator whenever handling powdered investment. Wet mop and vacuum (with HEPA filter) your work area.<br>· Wear proper PPE when melting metal. This includes: Tinted glasses, close toed shoes (preferably leather), clothing that minimizes skin exposure.<br>· Always use the overhead ventilation system throughout the entire casting process. |
| Finishing | · Polishing and finishing techniques can create dust containing metal, silica and other hazardous materials. | · Use the dust collector any time you operate the flex-shafts and polishing wheels.<br>· Eye protection and dust masks are required. |

# NEW MEDIA & DIGITAL ART

The primary hazards associated with computer use are visual and musculoskeletal stresses from prolonged use of the computer. Proper design of the computer work area with the use of ergonomically designed equipment (Mouse, keyboard, chair) can help avoid potential problems. Good working practices and maintaining a neutral body posture are also important techniques you can use to prevent these problems from happening.

| Activity | Hazards | Precautions |
|---|---|---|
| Computer Use | · Musculoskeletal disorders such as carpal tunnel, neck strain, etc. | · Maintain a neutral body position. *<br>· Place your keyboard and monitor directly in front of you.<br>· Adjust your chair height and arrange mouse and keyboard to achieve a neutral wrist posture.<br>· Use a mouse pad with a wrist rest.<br>· Move around regularly, get up, stretch, and walk around. |
| | · Eyestrain from improper viewing distances, glare or reflection on the screen. | · Place your monitor perpendicular to windows.<br>· Tilt screen slightly to avoid glare from lights and windows.<br>· Position monitor so top line of screen is at or below eye level.<br>· Place monitor directly in front of you and at least 20” from your eyes.<br>· Periodically clean monitors.<br>· Do not use bifocals with computer monitors. |
| | · Electrical hazards | · Use only power cords provided in the DMRC. |

* Keep hands, wrists and forearms straight and in-line with your body, roughly parallel to the floor. Elbows remain close to your torso. Shoulders should be relaxed with your upper arms hanging normally to your side. Head is level or bent slightly forward and aligned with your torso. The chair should support your back and legs while avoiding pressure on your thighs. Your feet should be supported by the floor or footrest.

# PAINTING

Paints and drawing media are a variety of pigments mixed with a binder or vehicle. The hazards associated with painting and drawing come from these binders or vehicles. Some of these materials may be carcinogenic or toxic by ingestion or inhalation. Some may be hazardous through skin absorption. In all cases accidental ingestion should be avoided from inadvertent hand to mouth contact or eating drinking and smoking. Careful review of the Safety Data Sheets (SDS) for the products you use and review the specific hazard control measures.

| Activity | Hazards | Precautions |
|---|---|---|
| Painting and solvent use | · Mixing dry powders and sanding can create dust.<br>· Some natural resins may cause skin irritation or allergies.<br>· Some solvents and vehicles used in paints can evaporate quickly and contaminate the air creating an inhalation hazard.<br>· Some solvents can be absorbed through the skin and can cause dermatitis with prolonged exposure.<br>· Many solvents are flammable | · Review the SDS<br>· Mix dry pigments in a chemical fume hood. Avoid creating dust.<br>· Wear a dust mask or respiratory when necessary.<br>· Avoid skin contact with solvents.<br>· Wear nitrile gloves.<br>· Wash hands before eating, drinking, and smoking. |
| Spray application | · Aerosol spray cans and airbrushes release very fine mist particles that can be inhaled.<br>· Aerosol sprays contain propellants that are extremely flammable. | · Never spray solvent-based materials in or near the building except in designated spray booths.<br>· Use water-based paints and inks rather than solvent based. |
| Drawing media | · Dust from charcoal sticks, pastels, etc. can aggravate asthma symptoms.<br>· Toxic pigments can be hazardous when inhaled. | · Don’t blow off excess pastel or charcoal dust.<br>· Wet wipe or mop dusty surfaces. |

# PHOTOGRAPHY

Hazards in photography generally come during the darkroom chemical development process. Some of these materials may be carcinogenic or toxic by ingestion or inhalation. Some may be hazardous through skin absorption. In all cases accidental ingestion should be avoided from inadvertent hand to mouth contact or eating drinking and smoking. Careful review of the Safety Data Sheets (SDS) for the products you use and review the specific hazard control measures.

| Activity | Hazards | Precautions |
|---|---|---|
| Photo processing | · Some processing chemicals are skin irritants, respiratory irritants. Exposure to these chemicals can cause adverse reactions and infections. | · Review the SDS.<br>· Avoid skin contact with chemicals by using tongs and wearing appropriate clothing and PPE.<br>· Wash hands before eating, drinking and smoking.<br>· Handle solutions in a well ventilated area and cover chemicals when not in use. |
| | · Many chemicals used in photo processing are highly toxic if ingested. | · Wash hands before eating, drinking, or smoking.<br>· Do not bring food or drink into the studio. |
| | · Toxic substances can be produced by mixing incompatible materials | · Review the SDS.<br>· Store incompatible materials separately.<br>· Label all containers. |
| | · Water and other liquids may be used in the vicinity of electrical equipment. | · Separate electrical equipment from water sources.<br>· Install GFCI outlets on all electrical circuits within 5 ft. of water sources. |

**Other Important Notes:**

1. Substitute less hazardous materials whenever possible.
2. Work in well ventilated areas.
3. Dispose of waste chemicals properly. Chemical disposal should be performed by the course instructor and/or the OEHS.
4. Wash your hands with soap and water after working with processing chemicals

# PRINTMAKING

Hazards associated with printmaking relate to chemicals found in inks, pigments, solvents, acids, adhesives and other materials that may be used. Some of these materials may be carcinogenic or toxic by ingestion or inhalation. Some may be hazardous through skin absorption. In all cases accidental ingestion should be avoided from inadvertent hand to mouth contact or eating drinking and smoking. Careful review of the Safety Data Sheets (SDS) for the products you use and review the specific hazard control measures.

| Activity | Hazards | Precautions |
|---|---|---|
| Use of inks, pigments, solvents. | · Some solvents and vehicles used in paints can evaporate quickly, contaminating the air.<br>· Some solvents can be absorbed through the skin.<br>· Many solvents are flammable. | · Review the SDS.<br>· Mix dry pigments with adequate ventilation. Avoid creating dust.<br>· Wear a respirator when necessary.<br>· Avoid skin contact by wearing appropriate PPE.<br>· Wash hands before eating, drinking, or smoking. |
| Acids | · Contact with acids can irritate the skin and mucous membranes and can cause chemical burns.<br>· Acid spills can damage clothing and equipment. | · Always wear chemical splash goggles and neoprene gloves when handling acids.<br>· Only authorized persons are allowed to mix acids.<br>· Mix acid solutions in the fume hood. |
| Moving | · Bodily injury may occur from lifting heavy stones. | · Use a mechanical lift when moving stones. |
| Hand tools | · Sharp or pointed tools can cause cuts or puncture wounds.<br>· Frequent and prolonged use of hand tools can cause carpal tunnel syndrome. | · Cut away from the body and keep hands clear of blade.<br>· Store tools safely with sharp edges covered.<br>· Use ergonomically designed tools that fit well in your hand. |
| Presses | · Heavy moving parts can cause personal injury | · Only use presses when you have been properly trained. |

# SCULPTURE

The hazards associated with sculpture vary greatly depending upon the processes and materials used. Each material's will have different properties so it is important to review the Safety Data Sheets (SDS). Obtain proper training from the instructor before using tools and equipment.

| Activity | Hazards | Precautions |
|---|---|---|
| Working with wood, plaster, metal and other materials | · Dust can cause allergic reactions of the eyes, skin, and respiratory system. | · Review the SDS.<br>· Use tools and equipment that are equipped with dust collection systems.<br>· Clean up dust by sweeping, vacuuming or wet mopping when appropriate. |
| Working with hazardous materials | · Some materials contain toxic chemicals that can be hazardous by inhalation or skin contact.<br>· Some materials are flammable. | · Review the SDS.<br>· Use hazardous materials in a well ventilated area.<br>· Wear appropriate PPE when handling materials.<br>· Keep containers sealed and stored when not in use. |
| Operating mechanical equipment | · Improper use of equipment can cause injuries.<br>· Clothing, hair, fingers can get caught in moving equipment.<br>· Damaged electrical cord, plugs, and switches can cause fires or electrical shock.<br>· Prolonged exposure to high noise levels can cause hearing loss.<br>· Extended use of vibrating hand tools can cause damage to the muscles and tendons in the hand. | · Don't use equipment without prior training.<br>· Keep safety guards in place.<br>· Use push sticks.<br>· Always turn equipment off when making adjustments.<br>· Wear appropriate clothing and PPE. |

| | | |
|---|---|---|
| Welding, brazing, soldering | · A number of air contaminants are produced including toxic metal fumes and gases.<br>· Base metals that are coated with paint can release toxic materials when heated.<br>· Base metals such as stainless steel or galvanized steel can release highly toxic fumes.<br>· Welding can produce ultraviolet and infrared radiation.<br>· Heat and slag can cause serious burns and fires. | · Review SDS for base metals, welding rods, flux, etc. If possible, avoid using metals that contain lead, zinc, nickel, chromium and other toxic metals.<br>· Remove any preservative coatings from base metal before welding or cutting.<br>· Work in a well-ventilated area.<br>· Wear a respirator if working on stainless or galvanized.<br>· Wear tinted eye protection.<br>· Wear natural fiber clothing, sturdy close-toed shoes, leather gloves and other protective clothing. |

**Other Important Notes:**

1. Do not use equipment until you have been trained by a faculty member.
2. Substitute less hazardous materials whenever possible.
3. Use proper lifting techniques when handling awkward or heavy materials.
4. Clean the studio and work surfaces after use. Either by sweeping, wet mopping or vacuuming (with a HEPA filter) whenever appropriate.
5. Observe all posted safety rules and instructions.
6. When finishing working or leaving the studio, wash hands thoroughly with soap and water.