

**ILLINOIS INSTITUTE OF TECHNOLOGY
SAFETY POLICY COMMITTEE**

Laboratory Safety Inspection Policy

Approved October 10, 2005

Reviewed and Modified: January 11, 2016

Reviewed: January 9, 2017

Reviewed and Modified: January 8, 2018

Reviewed and Modified: January 14, 2019

Reviewed and Modified: January 15, 2020

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1. PURPOSE & SCOPE

In order to provide a safe and healthful environment for study and research, free of recognizable hazards, all university departments maintaining or utilizing laboratory space will conduct an inspection at least annually in each such area. These inspections are required for compliance with the OSHA Laboratory Standard, [29 CFR 1910.1450](#). The University requires each department to develop and maintain a written Laboratory Inspection Plan (“Plan”) that addresses its unique risks and safety issues and complies with applicable laws and rules. In developing and maintaining their respective Plans, departments are encouraged to consult both this policy and the *Chemical Hygiene Policy for Lab Safety Standards*.

2. DEFINITIONS

Department Safety Officer (DSO) - a Department Safety Officer must be appointed for each department from the faculty or staff of that unit. The Department Safety Officer will have the duties and responsibilities set forth herein. (A person appointed as Department Safety Officer for this Policy may also act as a Department Safety Officer for or under other programs and policies.)

Responsible Person - faculty member, principal investigator or lab manager responsible for the operations within a designated laboratory or shop.

Laboratory - any defined space used as a laboratory, machine shop, auto shop, photographic darkroom or any other designated area where faculty, staff and/or students perform potentially hazardous tasks beyond those hazards normally associated with an office environment. The hazards to be considered include chemical, mechanical, electrical or radiation (including lasers). This space may also be used by University clubs.

Faculty Lab Safety Coordinator – a faculty member appointed by the Provost to assist departments in developing, implementing and monitoring laboratory safety standards that are consistent with IIT Laboratory Safety Policies. The Faculty Lab Safety Coordinator has the responsibility of gathering and archiving all documentation pertaining to compliance with the Laboratory Safety Policy and transmitting these to the Director of Environmental Health and Safety.

OSHA Laboratory Standard CFR 1910.1450 - federal OSHA regulation requiring all employers to develop and enforce appropriate safety procedures and policies for laboratory personnel.

3. RESPONSIBILITIES

The Director of Environmental Health and Safety, with the assistance of the Faculty Lab Safety Coordinator, is responsible for working with each Department Safety Officer to help implement and maintain compliance with the department’s Plan. The primary responsibility for writing the Plan rests with the departments. Each department’s Plan must be submitted to the Department of Environmental Health and Safety for final approval.

The Director of Environmental Health and Safety, or his or her designee, and/or the Faculty Lab Safety Coordinator will annually conduct an audit of each department’s laboratory inspection procedures and practices, and will as needed report the results of the audit in writing

to the Campus Safety Policy Committee. Audits will specify needed remediation of any weaknesses, and departments will be expected to take appropriate corrective action within a reasonable time after delivery of the audit findings to the department.

4. PROCEDURES

In developing its Plan, each department should ensure that it addresses, as applicable, the following guidelines:

a. The Department Safety Officer will set up a comprehensive schedule to cover all department laboratories at least annually and organize a team or teams to conduct the inspections.

b. The Department Safety Officer will maintain a list of all the laboratories and responsible persons within the department, and will annually provide that list to the Department of Environmental Health and Safety or the Faculty Lab Safety Coordinator or when any significant changes occur.

c. The responsible person for each laboratory will be notified of the inspection schedule and he or she (or a designated responsible party knowledgeable about the operations within the laboratory) should be present during the inspection.

d. Each lab inspection team should consist of at least one person from the department, and the Department of Environmental Health and Safety or the Faculty Lab Safety Coordinator. If the Director of Environmental Health and Safety and Faculty Lab Safety Coordinator are unable to accommodate to the schedule, the Director of Environmental Health and Safety will designate a replacement.

e. The inspection team should use and complete the form in Appendix B.

f. The inspection team will issue a final report, including all deficiencies and recommendations to the responsible person of the inspected laboratory, Department Safety Officer, department chair, Director of Environmental Health and Safety and Faculty Lab Safety Coordinator. Any subsequent documentation will be given the same distribution.

g. The report will require written responses and/or deadlines for re-inspection to determine compliance with recommendations or correction of any deficiencies.

h. The lab inspection team will issue a compliance memorandum when all reported deficiencies and recommendations have been adequately addressed by the responsible person.

i. Failure to respond adequately or to correct noted deficiencies may result in an escalation of the notification to the appropriate dean or vice president.

5. RECORDKEEPING

For each laboratory inspected, the inspection reports, recommendations, responses and re-inspections for the three previous inspections will be kept on file in the department office and the Department of Environmental Health and Safety office and will be made available to the Campus Safety Policy Committee upon request. A copy of the department's Plan must also be kept on file with the DSO and made available upon request.

6. REVIEW

A department must review its Plan as needed, but in no event less than every two years to ensure that it is compliant with all applicable laws and University policies and to evaluate its effectiveness. Revised plans must be submitted to the Director of Environmental Health and Safety for final approval.

7. APPROVAL

The IIT Safety Policy Committee has reviewed and recommend the adoption of this Policy on September 19, 2005, and this Laboratory Safety Inspection Policy is approved and effective this 10th day of October 2005. The Safety Committee will review the contents, implementation and effectiveness of this Policy no less than annually (but as often as necessary) and will make modifications as necessary to ensure that it meets all required legal and regulatory requirements and is adequately providing a safe and healthful environment for IIT faculty, employees and students. Any modifications to this Policy have been reviewed and approved, and are effective as of the date noted on the cover page.

By: _____ /s/
Allan S. Myerson, Provost and Senior Vice President

By: _____ /s/
John P. Collins, Vice President for Business & Administration

APPENDIX A SELECTED REFERENCES

Because of the uniqueness of each laboratory and the variance among the activities undertaken and the materials used therein, this Policy does not mandate compliance with a strict set of standards. This Policy requires that each department carefully review their laboratory activities and develop a Laboratory Inspection Plan that ensures health and safety. To assist departments in accomplishing this goal, the following documents and websites may be of use in developing a Plan and undertaking inspections as citations of authority for recommendations or noted deficiencies. A copy of each of the books is available from the Department of Environmental Health and Safety.

Books

- Dux, James P. and Robert F. Stalzer. 1988. *Managing Safety in the Chemical Laboratory*.
- Sax, N. Irving and Richard J. Lewis Sr. 1987. *Hazardous Chemicals Desk Reference*.
- Furr, A. Keith. 2000. *CRC Handbook of Laboratory Safety, 5th Edition*. CRC Press.

IIT Policies

Laboratory and Workshop Safety Policy:

https://web.iit.edu/sites/web/files/departments/general-counsel/IIT%20Lab%20and%20Workshop%20Safety%20Policy%2011.04.2019_.pdf

Select Information from other Universities

Northwestern University Office of Research Safety: <https://researchsafety.northwestern.edu/>

University of Pennsylvania Laser Safety Overview <https://ehrs.upenn.edu/health-safety/laser-safety/laser-safety-fact-sheets-reference-materials>

APPENDIX B
LABORATORY INSPECTION FORM

Question	Answer	Details
Administrative		
Emergency contacts and phone numbers, including off-hours (non-IIT) phone numbers are posted on each lab and storage area.	(Y / N)	
SDSs are available and clearly located.	(Y / N)	
The Chemical Hygiene Plan is current and posted.	(Y / N)	
Standard Operating Procedures (SOP) are available, current and posted.	(Y / N)	
A list of authorized occupants with training completion date(s) is posted. (Occupants must have up-to-date, applicable training to be allowed in the lab).	(Y / N)	
Means of Egress		
The lab is free of trip and slip hazards.	(Y / N)	
Emergency exits are not locked with slide bolts, dead bolts, padlocks, etc.	(Y / N)	
Hallways and exits are free of obstructions and stored material.	(Y / N)	
A minimum of 32" of egress is maintained.	(Y / N)	
No hazardous substances/equipment such as compressed gas cylinders are stored next to exit doors.	(Y / N)	
Personal Protective Equipment		
Safety glasses/goggles are available.	(Y / N)	
Approved eye protection is being used.	(Y / N)	
Face shields are available for operations with appreciable splash hazards (e.g. handling acids).	(Y / N)	
Appropriate shoes are being worn (ie. no sandals, flip-flops or high heels).	(Y / N)	
Lab coats and/or aprons are available and worn when appropriate.	(Y / N)	

Question	Answer	Details
Appropriate gloves are available.	(Y / N)	
Specialized personal protective equipment (PPE required by the SOP and/or SDS is available (e.g double gloves, rubber sleeves, explosion shield, etc.).	(Y / N)	
Appropriate clothing is worn for working in the lab (not too loose, covers skin, natural fiber, etc.).	(Y / N)	
Defective or damages PPE is not used.	(Y / N)	
Fire Extinguisher		
A fire extinguisher is required in this area.	(Y / N)	
A fire extinguisher is present.	(Y / N)	
The fire extinguisher is accessible.	(Y / N)	
The location of the fire extinguisher is clearly visible as marked.	(Y / N)	
The monthly and annual inspections are current.	(Y / N)	
The fire extinguisher is securely mounted.	(Y / N)	
The fire extinguisher is charged and the seals are intact.	(Y / N)	
Safety Shower and Eyewash		
An eyewash and/or shower are needed due to substances and compounds that have the capability of producing adverse effects on the health and safety of humans.	(Y / N)	
An eyewash and/or safety shower are present.	(Y / N)	
Not blocked – must be accessible with ten (10) seconds. Path of travel free of obstructions.	(Y / N)	
The location(s) is clearly marked.	(Y / N)	
Weekly inspections and flushing of the eyewash are current and documented.	(Y / N)	
Protective caps are in place on the eyewash.	(Y / N)	

Question	Answer	Details
Housekeeping		
Counters and floors are clean and clear of clutter.	(Y / N)	
Sinks are kept clean and free of clutter.	(Y / N)	
Equipment on benches is stable or secured.	(Y / N)	
Supplies are stored in a stable and secure manner.	(Y / N)	
Heavy items are stored on lower shelves.	(Y / N)	
Sharps disposal container(s) are provided and clearly labeled.	(Y / N)	
No storage within 18" of sprinkler heads.	(Y / N)	
Moving parts on machinery are guarded.	(Y / N)	
No food or drink stored in lab.	(Y / N)	
No chemical storage in food areas.	(Y / N)	
There are minimal combustibles such as boxes, paper, books etc.	(Y / N)	
Hot surfaces and equipment are labeled.	(Y / N)	
General Safety		
If a first aid kit is available, it is stocked.	(Y / N)	
No eating, drinking or applying makeup in the lab.	(Y / N)	
No chemical storage in food areas.	(Y / N)	
Moving parts on machinery are guarded.	(Y / N)	
If spare doors are blocked and not in use, a "not an exit" sign is posted on the door.	(Y / N)	
Refrigerator/freezers		
Are there any refrigerators or freezers in this lab?	(Y / N)	
Refrigerator/freezer is clean and frost free.	(Y / N)	

Question	Answer	Details
Refrigerators for chemical storage are labeled "no food or drink allowed."	(Y / N)	
Refrigerator/freezers with flammables is UL approved to store flammables and labeled "for flammable storage."	(Y / N)	
Carcinogenic and highly toxic chemicals are stored in the main compartment of the refrigerator instead of the door.	(Y / N)	
Compressed Gas		
There are compressed gas cylinders in this laboratory?	(Y / N)	
Cylinders are stored in upright positions and immobilized by chains or other means to prevent them from being knocked over.	(Y / N)	
Protective caps are in place when not in immediate use.	(Y / N)	
Cylinders are no more than 1 year old.	(Y / N)	
Hydro-static testing and interior inspections are up-to-date.	(Y / N)	
Cylinders are properly labeled for contents and hazards.	(Y / N)	
Cylinders are labeled Full or Empty.	(Y / N)	
Full cylinders are segregated from empty cylinders.	(Y / N)	
All compressed gas cylinders are regularly inspected for corrosion, pitting, cuts, gouges, digs, bulges, neck defects and general distortion.	(Y / N)	
Oxygen and flammable gasses are stored separately (20 feet apart or with a fire wall in-between).	(Y / N)	
Manual shutoff valves are provided at all points of supply and use.	(Y / N)	
Corrosive gasses are stored for no more than 6 months.	(Y / N)	
Pressure gauges and regulators are in place as appropriate and are not damaged.	(Y / N)	
Regulators are compatible with the gas cylinder.	(Y / N)	

Question	Answer	Details
Toxic, flammable, and corrosive gases are used under a fume hood or where there is approved adequate ventilation.	(Y / N)	
Hoses and tubing are in good condition.	(Y / N)	
Teflon tape is not used on CGA fittings (straight thread) where the seal is made by metal-to-metal contact.	(Y / N)	
Cylinder carts are available for transport.	(Y / N)	
Chemical Hygiene and Storage		
Appropriate hazard warning signs posted on door and storage areas (e.g. Cancer Agent).	(Y / N)	
All chemical containers are kept closed.	(Y / N)	
All containers labeled legibly with content, manufacturer, and hazard warning.	(Y / N)	
Storage containers are in good condition: no rust, leakage, dents, or crystallization.	(Y / N)	
Glass storage containers are limited to 1 gallon/4 liter size or smaller.	(Y / N)	
Peroxide formers, shock sensitive, and/or re-actives are labeled and dated upon receipt and opening.	(Y / N)	
Peroxide forming chemicals disposed of within 3-12 months after opening depending upon the compound.	(Y / N)	
Acid and bases are stored separately from solvents. Exception: store acetic acid with solvents.	(Y / N)	
Manufacturer expiration dates are observed.	(Y / N)	
Water reactive chemicals stored away from water (liquid) and water (liquid) vapor.	(Y / N)	
Corrosive and flammable chemicals are stored below eye level.	(Y / N)	
Corrosives are stored on plastic trays in acid cabinets with plastic shelving.	(Y / N)	
Chemical containers are not stacked.	(Y / N)	
Glass storage containers are limited to 1 gallon/ 4 Liter size or smaller.	(Y / N)	

Question	Answer	Details
No more than 10 gallons of flammable liquid are stored outside a flammable liquid cabinet.	(Y / N)	
No more than 40 gallons of flammable liquid stored per lab.	(Y / N)	
Carcinogens, reproductive toxins and highly toxic chemicals stored and used in a designated and labeled area. No open bench storage.	(Y / N)	
All chemicals must be stored in their chemical group. If multiple groups are on a shelf they must be separated by secondary containment.	(Y / N)	
Opened 5 gallon/20 Liter containers should be placed in secondary containment.	(Y / N)	
Ventilation		
This Lab has a fume hood.	(Y / N)	
If chemicals or hazardous substances are in the fume hood, the fan is on with the sash lowered.	(Y / N)	
Hood sash is in working order - not stuck, broke or removed.	(Y / N)	
Equipment and materials are positioned and used at a minimum of 6" from the front of the hood.	(Y / N)	
Airfoils are not altered or removed.	(Y / N)	
Equipment or materials do not obstruct air flow.	(Y / N)	
Equipment used in the hood is raised above the work surface to allow proper air flow.	(Y / N)	
Hood interior is clean, uncluttered and not used as permanent storage.	(Y / N)	
Annual hood certification present indicating face velocity is 100-120 fpm.	(Y / N)	
Arrows indicating the correct sash height posted.	(Y / N)	
Hood low flow alarms present and operational.	(Y / N)	
Perchloric Acid hoods labeled "For Perchloric Acid Operations Only".	(Y / N)	
Interior lighting is working properly.	(Y / N)	

Question	Answer	Details
Personal Protective Equipment (PPE)		
Safety glasses/ eye protection available.	(Y / N)	
Lab coats and aprons available.	(Y / N)	
Face shields available for operations with appreciable splash hazards (e.g. handling acids).	(Y / N)	
Appropriate shoes worn (e.g. no sandals, no high heels).	(Y / N)	
Appropriate gloves available.	(Y / N)	
Biosafety		
This lab is used for Bio-hazards.	(Y / N)	
The approved IBC Protocol Application Form is Posted.	(Y / N)	
Annual certification of biosafety cabinet present.	(Y / N)	
Appropriate hazard warning signs posted on door and storage areas (e.g. Biohazard - Legionella Pneumophila)	(Y / N)	
All containers labeled for content and hazard.	(Y / N)	
Biological waste containers labeled.	(Y / N)	
Sharps containers provided and clearly labeled.	(Y / N)	
Municipal trash containers free of biohazardous waste.	(Y / N)	
Radioactive Laboratories		
Radioactive materials are used in this lab.	(Y / N)	
Radioactive materials label on the door, refrigerators, equipment, etc.	(Y / N)	
Radioactive materials are secured (door kept locked or personnel present).	(Y / N)	
The radioactive waste is properly stored and labeled.	(Y / N)	
Radioactive materials are in labeled containers.	(Y / N)	

Question	Answer	Details
All occupants have current training records.	(Y / N)	
The work areas and radioactive sinks are demarcated.	(Y / N)	
All work areas are covered with absorbent paper.	(Y / N)	
All individuals in the room are wearing dosimeter badges.	(Y / N)	
Inventory logs are current.	(Y / N)	
An incidental sink disposal log is present.	(Y / N)	
Laser labs are posted at the entrance.	(Y / N)	
Lasers are labeled with the class and hazard warnings.	(Y / N)	
Eye protection is appropriate for the laser that is present and worn during operation.	(Y / N)	
Chemical Waste Management		
Hazardous waste is generated in this laboratory.	(Y / N)	
Hazardous Waste Plan present.	(Y / N)	
Waste is stored in a designated area which is posted "Satellite Chemical Waste Accumulation Area."	(Y / N)	
Accumulation containers are clearly marked as "Hazardous Waste".	(Y / N)	
Waste containers labeled with chemical constituents and approximate percentages.	(Y / N)	
Waste containers are labeled with a start date.	(Y / N)	
Containers are compatible with waste.	(Y / N)	
Waste does not exceed 55 gallons/208.2L of hazardous waste or 1 quart of acutely hazardous waste.	(Y / N)	
Waste containers closed and in good condition.	(Y / N)	
Secondary containment of wastes stored outside hood.	(Y / N)	
Municipal trash containers free of chemical waste.	(Y / N)	

Question	Answer	Details
Waste is regularly removed from the lab and occupants know the procedure for arranging removal.	(Y / N)	
Office Space		
Is there a designated office area in this lab?	(Y / N)	
The Department of Environmental Health and Safety or their alternate has approved in writing that this area may be used as an office area.	(Y / N)	
The area is clearly marked to show that chemicals/other hazards are not allowed.	(Y / N)	
The area is clearly marked where PPE is not required and food and drink may be consumed.	(Y / N)	
There is proof that people using the area have been trained where the boundaries are and what safety precautions must be followed (e.g. no gloves, contaminated lab coats, wash hands before eating or drinking, etc.)	(Y / N)	
The office area is free of tripping hazards (e.g., cables, loose tiles, damaged carpet).	(Y / N)	
Electrical cords and plugs are in good condition.	(Y / N)	
Workstation set-up provides a minimum of 28" egress.	(Y / N)	
Office supplies stacked in a stable and secure manner.	(Y / N)	
Hallways and exits are clear.	(Y / N)	
Coffee pot not placed on or near combustible material.	(Y / N)	
There is minimal combustibles such as paper, cardboard, books, etc.	(Y / N)	
Building Condition		
There are no unsealed holes or pen pipe/conduit through floors, ceilings, walls present.	(Y / N)	
The duct work is sealed.	(Y / N)	
There are no loose floor tiles present.	(Y / N)	

Question	Answer	Details
There are no loose ceiling tiles present.	(Y / N)	
There is no chipping/peeling paint present.	(Y / N)	
There is no suspect friable asbestos.	(Y / N)	
There is no exposed Mastic.	(Y / N)	
There is no sign of bugs/rodents present (excluding those used for experiments).	(Y / N)	
There are no leaking pipes.	(Y / N)	
Faucets and drains work properly (e.g. no leaks, turn on and off smoothly, no damaged valves).	(Y / N)	
Electrical		
The work area is illuminated.	(Y / N)	
Emergency lights work if present.	(Y / N)	
Electric cords and plugs are in good condition with no splices, breaks in insulation, removed grounding, etc.	(Y / N)	
No equipment or supplies are resting on electric cords.	(Y / N)	
All extension cords and equipment cords are placed in such a manner so as to minimize the risk of tripping over a cord.	(Y / N)	
All cords are run so as to prevent damage to the cord insulation.	(Y / N)	
Surge protectors are temporary and are prohibited to use for more than 90 days, unless they are protecting computers or sensitive equipment.	(Y / N)	
Extension cords are temporary and remain in use for less than 90 days.	(Y / N)	
Electrical outlets are not overloaded with appliances.	(Y / N)	
All extension cords have the wires with a minimum size of 14 WG.	(Y / N)	
Extension cords and/or surge protectors are not daisy chained.	(Y / N)	

Question	Answer	Details
Electrical hand tools/equipment is properly grounded and double insulated.	(Y / N)	
All electrical panels have a clear area at least 36 inches by 36 inches, centered on the panel, in front.	(Y / N)	
All the face-plates for the switches, junction boxes and receptacles are present and completely cover the switch/receptacle wiring.	(Y / N)	
Any receptacles near water sources are protected by Ground Fault Circuit Interrupters GFCI.	(Y / N)	
Power cords are not routed through walls, windows, ceilings, floors or similar openings.	(Y / N)	
Switches and circuit breakers are properly identified as to the service they are in and what they control.	(Y / N)	
Multi-outlet power strips are Underwriters Laboratories (UL) listed and have circuit breakers.	(Y / N)	
Energized parts, circuits and equipment are guarded against accidental contact.	(Y / N)	
Only qualified employees with NFPA 70E training work on electrical systems.	(Y / N)	
Equipment has been approved by recognized standards agencies and testing laboratories such as Institute of Electrical and Electronic Engineers (IEEE), UL, U.S. Bureau of Mines and National Electrical Manufacturers Association; or equipment not approved by these agencies has been approved, in writing by the Department of Environmental Health and Safety.	(Y / N)	
Equipment has operation manuals or an SOP to cover operation.	(Y / N)	
Special or Unique Hazards		
List any special or unique hazards.		

