

Lab Management Plan Training

For

Lab Number: S-344

Lab Type: Analog and Digital Control Systems Lab

Department: Electrical, Computer and Biomedical Engineering

Chemical Free Laboratory

Document No.:	LMP-S-344
Revision Date:	June 2024
Approved By:	ECBE Dept Chair
	Facilities EHS Dept



1. Scope and Introduction

This document supplements the MSOE Lab Management Plan (LMP) and provides specific information relevant to this lab. This document will be used to train students taking courses in this lab to ensure 1) a safe environment and 2) compliance with environmental, health and safety regulations.

This training information is intended to familiarize the student with the lab environment including safety equipment and procedures, clothing requirements and limitations on possessions that may be brought into the lab, information on potentially hazardous material that may come into the lab; special equipment and procedures that may be utilized during the semester.

2. Basic Rules

- The lab is open for access from 7:30 am to 10:00 pm Monday through Thursday, 7:30 am to 5:00 pm Friday, 10:00 am to 6:00 pm Saturdays and as posted on the electronic display in TSC for Sundays, Holidays and break weeks.
- Chemicals are not allowed in the lab.
- Food and drink are allowed in the lab since there are no chemicals in the lab
- Smoking is not allowed in MSOE buildings. Chewing tobacco is also not allowed in the lab.
- No children or pets are allowed in the lab. This ban does not pertain to seeingeye dogs, stroke dogs or other working animals.
- The lab is to be kept neat and orderly. It is understood that during project construction periods some messes and disorganization will occur, however as soon as work is done the area must be cleaned up and organized to prevent injuries. Return all test leads to the holder on the bench from which they were removed.
- Due to open geared rotating machinery, loose fitting or flowing clothing, neckties, long necklaces or neck scarves are **not** permitted in the lab when working.
- Due to open geared machinery, hair shoulder length or longer should be pulled back and out of the way of your face for the period of time you are in the lab.

3. LMP Training for Students

- A. Emergency Action Plan Basic information:
 - The emergency number on campus is 7159 and can be dialed from any on campus phone. If using a cell phone dial (414)277-7159.



- There is NO campus phone for this lab. The nearest Campus phone is located next to S306 and has a one button call selection for Public Safety.
- The evacuation route map is located on the north wall near the door.
- The emergency QR code poster must be posted in the lab. If it is missing, contact Jim Frommell or Nate Loy.
- MSOE's emergency response guide (accessible using the QR code posted in all labs and classrooms) covers the following emergencies: active shooter, bomb threats, chemical spills, criminal activity, fire and evacuation, hazardous odors or leaks, medical emergencies, national terrorism advisory system, severe weather, suspicious packages, and utility failures.
- The fire extinguisher for the room is located on the north wall of the room to the right of the door, as you exit. It is an A-B-C class extinguisher using FE-36 as the agent. The backup extinguisher is a Dry Chemical type A B C class located on the east wall just before the junction of the North-South hallway with the Northern East-West Hallway. *Note: only trained personnel may use a fire extinguisher. A review of the attached fire extinguisher factsheet will satisfy this requirement.*
- The rally point (assembly point) for this lab is Raiders Field located North of State Street, exercise caution when crossing the street.
- B. Fire Emergency

If you observe a fire:

- 1. Alert others in the lab and the professor running the lab, if present, to the fire.
- 2. Do not attempt to fight the fire unless you believe you have sufficient time to evacuate the room after using the fire extinguisher. If you use the extinguisher, pull the pin, aim at the base of the fire, squeeze the handle and discharge the contents of the extinguisher in a sweeping motion at the base of the fire.
- 3. Leave the room, attempt to close the door behind you to limit the fire's progress only if you can do so safely.
- 4. Activate the pull station located to the immediate left of Southeast stairwell exit doors as you pass it.
- 5. Call the campus emergency number when you have reached a safe location (277-7159 or 7159 from a campus phone).
- 6. Evacuate the building and go to the rally point. Do not use the elevators.



7. Do not under any circumstances leave the rally point to return to the building until you are told it is safe to do so by competent authority.

In the event of a Fire Alarm sounding:

- 1. Leave the room, attempt to close the door behind you to limit the fire's progress only if you can do so safely.
- 2. Evacuate the building and go to the rally point. Do not use the elevators.
- 3. Do not under any circumstances leave the rally point to return to the building until you are told it is safe to do so by competent authority.
- C. Personal Injury
 - Minor injuries may be taken care of with a first aid kit, which is available in S350 and contains a small inventory of adhesive bandages to contain the blood from a very small cut. Once this First Aid treatment has been accomplished, contact the Campus Health for further care of the minor wound.
 - If medical attention is required, contact Public Safety at (414) 277-7159 (or 7159 from campus phone).

In the event of discovering blood or bodily fluids in the lab:

- Do not attempt to clean up the area due to the potential for blood borne pathogens. There are staff personnel in the Facilities department specially trained in containing and cleaning up blood and other bodily fluids.
- Leave the area and call (414) 277-7159 (or 7159 from campus phone) immediately.
- D. Chemical Spill N/A
- E. Hazard Communication (Right to Know)
 N/A
- F. Chemical Handling
 - There is no storage or handling of any chemicals in this lab. Any chemicals found in the lab will be confiscated and be cause for retraining.
- G. Chemical Storage N/A





- H. Chemical Disposal
 - Bring batteries for recycling to S348 for collection.
 - Personal lamps with tube fluorescent lamps or compact fluorescent lamps must be taken to the Technical Support Center for proper handling/disposal.
 - The ECBE Satellite Accumulation Area (SAA) located in S349. Please contact the Technical Support Center if you have any unwanted materials.
 - Lab techs are responsible for labeling unwanted materials.
 - The lab techs will arrange transfer of unwanted materials from the SAA to MSOE's Central Accumulation Area (CAA).
 - Only certain MSOE personnel have appropriate training and are authorized to transport unwanted material from the SAA to the CAA.
- I. Personal Protective Equipment (PPE)
 - This lab has no special personal protective equipment requirements.
- J. Chemical Fume Hoods N/A
- K. Other Lab Rules

Special Equipment in the lab

- Each station has a desktop computer, a Quanser Universal Power Supply and an associated Servo Motor and cabling set.
- Use of this equipment is limited to those students in the EE and BE controls courses. No other students should be working with this equipment without special permission from the Professor in charge of the lab.
- Students operating this equipment without permission or a professor's guidance will be subject to costs to repair or replace units damaged by their actions.
- Access lists will be provided to TSC by the professor in charge of the class during the semester the class is in session.

Special Equipment Usage

- The Quanser equipment usage will be covered by the instructor of the lab if there are specific procedures for this lab. Refer to the instructor's syllabus for details.
- L. Other
 - If there are any questions as to the safe use of an item brought into the lab as part of a senior design project or any special function such as a



demonstration; contact the EECS Technical Support Center for a determination of hazard or risk.

4. Training Documentation

Training will be documented using the attached form titled, "Student Laboratory Management Plan (LMP) Training Verification". NOTICE: Students must receive retraining whenever they demonstrate that training was not understood (i.e. a failure to follow safety precautions is observed). This must be done before the student is allowed back into the lab.

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Fire Extinguishers

A Factsheet on Choosing & Using Fire Extinguishers

ndividuals should attempt to fight only very small or incipient stage fires and only if they understand the proper use of a fire extinguisher.

Types of Extinguishers

Fire extinguishers are rated by the type of fire they can put out. It is important to choose the proper fire extinguisher for each fire. Fire extinguishers are labeled with letters and/or pictures to indicate the type of fire on which the extinguisher is effective.

Ordinary Combustibles Fire



A Paper, wood, Plastics, fabric, Rubber, trash

Flammable Liquids Fire



B Gasoline, Oil, Grease,

some Paints

and solvents

С

Electrical Fire



Energized Electrical Equipment; Appliances, Computers, Circuit

Breakers, Wiring

A combination **ABC Dry Chemical** extinguisher can be used on more than one type of fire.

Remember the P.A.S.S. Word

There are four basic steps to using a fire extinguisher.

Pull

Place the Extinguisher on the floor. Hold it by the tank



(pressure on the handle would pinch the pin). Pull the pin straight out.

Aim



Start 10 feet back from the fire. Aim at the base of the fire.

Squeeze

Squeeze the lever on the fire extinguisher.

Sweep



Sweep from side to side, moving in slowly until the fire is out.

Get Out

If the fire gets bigger, close the door and evacuate.

Be Prepared

Training and practice are the best ways to prepare for emergencies. Make certain you know the P.A.S.S. system and understand how to safely use a fire extinguisher before you ever need to.

- Don't force yourself to fight a fire that makes you uncomfortable or puts you at risk.
- Always let someone know and make certain 911 has been called before using an extinguisher on a fire.
- Fire extinguishers are small quick fixes. If you are unable to put out the fire with one extinguisher, leave and close the door behind you.
- A fire involving any portion of building structure is too big for a portable fire extinguisher.
- While using a fire extinguisher stay low, the smoke is filled with carbon monoxide and many other toxic gases.
- Don't let the fire come between you and your exit. Keep your back to the exit



Student Laboratory Management Plan (LMP) Training Verification

The following individuals were present for training on issues and topics regarding:

- Basic Lab Rules (hours, clothing requirements, food and drink restrictions)
- Emergency Action Plan
- Fire Emergency
- Personal Injury
- Chemical Spill N/A
- Hazard Communication (Right to Know)
- Chemical Handling
- Chemical Disposal
- Personal Protective Equipment
- Chemical Fume Hoods N/A
- Other applicable lab rules

Name (Print)	Signature

Instructor (Pleas	e Print):	
Date of training:		
Lab: S344	Course:	Section:

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Name (Print)	Signature