

U of MN Department of Mechanical Engineering
Teaching Laboratory Safety Plan

Student Responsibility

You are responsible for knowing the operation procedures and the hazards of the materials you work with. Ask your professor or Teaching Assistant (TA); read the lab manual. Know where your safety equipment is in the lab. Know where and what your resources are.

1. General Safety Information

General safety information for the University of Minnesota is available at <http://www.dehs.umn.edu> and for the Department of Mechanical Engineering at <http://www.me.umn.edu/info/services/safety>.

If you have any questions regarding safety, please feel free to contact the Mechanical Engineering Department Safety Committee, at me-safety@me.umn.edu.

2. General Emergency Procedure

Each laboratory larger than 1000 sq. ft. must have two unobstructed routes for emergency egress.

If you encounter an emergency such as a chemical or blood spill, please contact the Department of Environmental Health and Safety at 612-626-6002. Evacuate the immediate area and alert others to the danger. Do not reenter contaminated room.

For exposure to bloodborne or other infectious pathogens, follow the procedures under "Needle Sticks" – <http://www.dehs.umn.edu/safety/needle.html>.

For fire, personal injury and all other emergencies call 911. Remain on the phone if possible until emergency responders arrive. If using a cell phone, ask for the University of Minnesota dispatcher.

3. Chemical Procedures

All containers for chemical storage should be labeled appropriately. Liquid chemicals must be equipped with secondary containment. Gas cylinders are secured and stored appropriately.

Do not dispose of chemicals into sink or otherwise into the sewer system. For hazardous waste disposal, contact your TA.

4. Radioactive Materials Procedures

Students are not to handle radioactive sources in the laboratories except under the guidance and supervision of instructor or TA.

All lab instructors using radioactive materials at the University of Minnesota must

- Complete required training modules; and
- Comply with the radiation policies and procedures of the university (contained in the Radiation Protection manual).

Initial training can be completed on line at the Department of Environmental Health and Safety web site www.dehs.umn.edu. Contact the Department of Mechanical Engineering Radiation Training Officer, Shawn Chen (chens@umn.edu), for annual radiation update training.

5. Laser Radiation Procedures

Students are not to move or adjust lasers in the laboratories except under the guidance and supervision of an instructor or TA. Unexpanded laser beams must be shrouded to prevent accidental beam reflection.

All instructors or TAs using Class 3b or Class 4 lasers at the University of Minnesota must:

- Complete required training modules; and
- Comply with the radiation policies and procedures of the university (contained in the Radiation Protection manual).

For lasers Class 3A and below, goggles are required for all the students attending the lab.

6. Noise Extremes

Any laboratory operation that produces significant noise (100 decibels or greater) needs a hearing conservation program to protect students from excessive exposure, that is, exposure to significant noise for a 2-hour average duration.

7. Machine operation safety procedures

For machine tools used for teaching, the students and instructors must follow safety procedures for the specific class. A good safety plan is presented in ME3221

For the machines in the ME student shop, contact Peter Zimmermann in ME 171 or 180 (625-1301, zimme049@umn.edu) for safety and operation training before machine tools are used.

8. Laboratory-Specific Standard Operating Procedures

Each lab should prepare and post specific operating procedures for the equipment used in the lab. Emergency shut off procedures should be posted near the equipment and available near the door for emergency responders. Students should be given these written procedures prior to operating any equipment in a laboratory.

9. Personal Protective Equipment

Eye protection goggles are required for all students whose eyes may be exposed to physical hazards. Lab coats or other similar clothing protectors are encouraged for all laboratory students.

Gloves made of appropriate material may be required to protect the hands and arms from thermal burns or cuts.

Loose clothing, long hair, jewelry and other potentially hazardous items should be secured or removed prior to operating machinery. Bare feet are not permitted in any laboratory. Sandals and open-toed shoes are strongly discouraged in all laboratories and are not permitted in any situation where lab coats and gloves are required.