

# 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; 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 will be available at [www.dehs.umn.edu](http://www.dehs.umn.edu) and for the Department of Mechanical Engineering at <http://www.me.umn.edu/safety/>.

If you have any question about safety, please feel free to send email to Mechanical Engineering Safety Committee, T. H. Kuehn, Chair, at [me-safety@me.umn.edu](mailto:me-safety@me.umn.edu).

### 2. General Emergency Procedure

Each laboratory larger than 1000ft<sup>2</sup> 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](#)."

For fire, personal injury and all other emergencies call 911. Use a hard wired University phone and 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, please contact Melvin Chapin at ME180 [mchapin@umn.edu](mailto:mchapin@umn.edu).

### 4. Radioactive Materials Procedures

Students are not to handle radioactive sources in the laboratories expect 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).

Training tapes can be viewed in Minneapolis in the Learning Resources Center (LRC) at the Biomedical Library in Diehl Hall. Or you can contact Mark Stolzenburg (ME 272, [mstolz@me.umn.edu](mailto:mstolz@me.umn.edu)) for the radioactive training.

## **5. Laser Radiation Procedures**

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

All instructors or TAs using Class 3b or Class 4 laser 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 Class 3A and below laser, goggles are required for all 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 Melvin Chapin in ME180 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, cuts, or chemical exposure that may result in absorption through the skin or reaction on the surface of the skin.

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.