Laboratory Safety Guidelines

The one factor that must be present in all laboratory activities is **safety**. Good laboratory practices require each individual to eliminate hazards to themselves, other people in the class, the college and the environment in every laboratory activity. Students are expected to follow the policies and procedures described here.

- Know and use only safe experimental methods.
- Know the location and use of available safety equipment.
- Do not allow unsafe practices to exist unchallenged.
- **In case of an accident, notify your instructor immediately.**

Students will acknowledge in writing that they understand these safety policies and procedures. Students will be evaluated on their understanding and use of safety and good laboratory practices.

**Policies**
1. Goggles are **required** whenever experiments are performed by anyone in the lab.
2. Shoes with enclosed toes are to be worn in the lab. Sandals are not allowed.
3. Lab coats and long pants will be worn in the lab. Shorts are not allowed.
4. Long hair will be tied back.
5. No eating, drinking, smoking or chewing gum will be done in the lab.

**Procedures**

**Handling chemicals:**
1. Handle all chemicals with caution.
2. Keep your hands away from your face and eyes.
3. Wear gloves when handling hazardous chemicals.
4. Wash hands after each lab.
5. Check the label on reagent bottles twice before removing any of the contents. Take only as much of the chemical reagent as you need.
6. Never return unused chemicals to their original container.
7. Never taste anything in the laboratory.
8. Never smell anything used in the experiment unless directed to do so.
9. Know the location of Material Safety Data Sheets (MSDS) for chemicals used.
10. Dispose of all chemical waste properly. Solid chemicals, metals, paper, and all other insoluble materials are to be disposed of in the proper waste containers, not in the sink. Sinks are to be used only for water and those solutions designated by the instructor. Check the label of all waste containers twice before adding your chemical waste to the container.

**Uses of equipment:**
1. Be familiar with the location and use of safety equipment in the lab.
   - Eye wash bath
   - Fire extinguisher
   - First aid kit
   - Emergency phone
   - Shower
   - Clean-up kits
   - Exit routes
   - Baking Soda
2. Do not use broken glassware. Dispose of broken glassware in the proper container.

**Use of laboratory:**
1. Conduct yourself in a responsible manner at all times in the laboratory.
2. The laboratory will be used for assigned experiments at scheduled times.
3. No students are allowed in the lab without an instructor, even when the lab is used as a classroom.
4. Read each experiment before coming to lab, and become familiar with the procedures.
5. No lab work is to be started without a prelab and a go-ahead from the lab instructor.
6. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ask the instructor for further directions before proceeding.
7. Work areas should be kept clean and tidy at all times.
8. Bench tops should be cleaned before and after each lab.
9. Store coats and book bags as safely as possible in the lab.
10. Always work in a well ventilated area. Use the fume hood when working with volatile substances or poisonous vapors. Never place your head into the fume hood.
11. Specific techniques and procedures will be discussed and demonstrated as needed for each laboratory experiment.

Revised Fall 2006
I have attended the safety Lecture.

I understand the safety procedures and potential hazards I might encounter.

When I have an existing medical condition, I am aware that I should seek medical advice.

I agree to follow the safety procedures as listed in the handout and discussed today/tonight.

I agree to wear my safety goggles and lab coat whenever any experimental work is being conducted by anyone in the lab. Failure to abide by this rule will result in my removal from the lab.

____________________________   ________________________
Signature                      Date

____________________________
Print your name

____________________________   ________________________
Class-section                  Instructor
Organic Chemistry Lab: Student laboratory procedures

1. Each student must be familiar and abide by the safety procedures as set forth in the handout “Laboratory Safety Procedures” distributed at the first class meeting.

2. Students must leave their coats and book bags on the shelf adjacent to the main door (no coats or book bags will be allowed on the center table, floor or any other place in the laboratory).

3. Room access:
   a. The chemical prep room (CLB 305) is off limits to students
   b. Only 4 students per class should be in the instrument room at any given time.

4. General lab practices:
   a. Unless otherwise noted, all experiments will be conducted in the fume hoods - BEHIND THE RED LINE and with the sash pulled down more than halfway.
   b. Students are expected to return reagents and equipment to their appropriate locations.
   c. Cleaning glassware with acetone or alcohol solvents must be done in the sinks in the hoods. Small volumes of acetone, ethanol, or methanol may be rinsed down the drain while running large amounts of water.

5. Spills:
   a. All spilled chemicals, sand, water, etc. are to be cleaned up immediately from counter tops, floors, and hoods.
   b. Balances and instruments are to be cleaned immediately when contaminated with chemicals.

6. The instrument room is for instrument use only.
   Cell cleaning and preparation of volatile samples must be done in the lab/hood area. Students are required to work in the hood and wear gloves when working with CH₂Cl₂ to clean the salt plates for the IR. Use no water to clean the salt plates!!

7. Disposal of Chemicals:
   Each student is responsible for safely disposing of any waste created in the experiment (in labeled waste containers if sink disposal is not appropriate).
   a. Halogenated wastes will be collected separately from nonhalogenated wastes.
   b. Broken glass is to be placed in specially designated boxes - never in the trashcan.

8. Pasteur Pipets:
   Used Pasteur pipets that have residues of volatile liquids (organic or otherwise) are to be temporarily placed in a large beaker at the back of the hood. After evaporation is complete, the used pipets can be thrown in the used glassware box.

9. Students will check out with the instructor before leaving the lab.
   a. Kits should be restocked with clean glassware.
   b. Equipment should be returned to its proper place.
   c. Hoods, balances, and central bench should be cleaned up.
   d. Place the stools around the hoods and the center table.

10. As a general rule, students shall leave the laboratory in such a condition that any person can use the room without fear of unknowingly contacting chemical, bacterial, or physical hazards.

11. Students and staff must be aware that the lack of adherence to the chemical hygiene plan is a violation of college policies and state law.