**SAFETY REGULATIONS FOR LABORATORY COURSES FOR NUMBERED BELOW 698**

(Approved January 1995)

The following regulations\* are designed for the protection of students and faculty and require the full cooperation of everyone in the laboratory. Because the prevention of accidents involves a knowledgeable awareness of safe practices, it is important that students not only follow the specified regulations, but that they also read about experiments in advance of the laboratory period so that they will be aware of potential hazards.

\*Students doing Research, Honors Research, Environmental Chemistry, or any advanced laboratory (courses above 698) are under the jurisdiction of the document titled “Chemical Hygiene Plan and Safety Regulations for the Department of Chemistry”.

Study carefully the following safety regulations. When you attend the first laboratory session in any chemistry laboratory course numbered below 698, you must pass a written or online examination (multiple choice questions) with a score of 100% before you will be allowed to begin experimental work. Students who fail to achieve 100% on the first try will have an opportunity to repeat the examination.

**Any woman who is concerned about the possible effects of laboratory solvents or other compounds on a fetus should consult with her physician before doing laboratory work.**

**Willful Non-Compliance with These Regulations Is a Serious Offense Which Will Result In Disciplinary Action.**

**Building Alarm**

When the alarm sounds, take all personal belongings, follow the instructions of your Teaching Assistant and evacuate in an orderly fashion through the nearest safe exit. Always use stairways, never elevators.

**Accidents Requiring Emergency Action**

PERSON ON FIRE OR SPLASHED WITH CORROSIVE CHEMICAL: In the event that any individual has been splashed with a burning solvent or corrosive chemical or has any clothing on fire, the affected area must be doused quickly with running water to avoid serious injury. This action should be performed immediately by the person(s) closest to the victim. Unless only a small area (such as the hand) is affected, a safety shower should be used.

CORROSIVE SUBSTANCE IN EYE: Get the injured person to the nearest eye wash as quickly as possible and irrigate the eye with plenty of water for 10- 15 minutes.

After an initial few minutes of irrigation of the eye, have the person remove any contact lenses and then continue to irrigate the eye. The injured person should be encouraged to keep his/her eyes open as much as possible during the irrigation, which may require that he/she hold the eyelid. Finally, place a loose (no pressure) clean bandage or cloth over the eye.

**Reporting Accidents and injuries**

Report any accident, injury (such as cuts, burns, or foreign objects in the eye), or chemical spill to your Teaching Assistant or Instructor immediately after emergency action (see above) has been taken.

**Safety Equipment**

Become familiar with the location and operation of the nearest fire extinguisher, safety shower, eye wash, and fire blanket.

**Eye Protection**

State law requires that approved safety goggles must be worn at all times during any laboratory activity potentially harmful to the eyes. Therefore, goggles are required in the laboratories associated with all undergraduate courses except when no experimental work is in progress anywhere in the laboratory.

Contact lenses constitute a special hazard that is not always recognized. Because foreign substance or corrosive chemicals can be trapped between the lens and the eye, their use in laboratories is not recommended.

**Working Hours**

Students are not allowed to work in an undergraduate laboratory unless a Teaching Assistant is on duty in that laboratory.

**Handling Chemicals**

Always take care in handling chemicals; if they contact the skin wash immediately with soap and water. Wash hands thoroughly before you leave the laboratory. Unless you have specific information to the contrary, all chemicals should be considered poisonous and corrosive. Keep such substances from hands, face, clothing, and shoes.

**Food and Beverages**

Because of the possibility of chemicals getting into the mouth or lungs through contamination, do not eat or drink in any of the laboratory rooms.

**Behavior**

Throwing of objects, running, pushing, practical jokes, or any other horseplay will not be tolerated in any laboratory.

**Housekeeping**

Laboratory benches and other facilities should be kept clean, neat, and uncluttered at all times. Drawers and cabinets should be closed and aisles should be kept free of obstructions. Spilled chemicals and broken glassware should be cleaned up carefully and without delay. Any chemical spill should always be reported to the Teaching Assistant. The floor should be kept free of slipping and tripping hazards, such as spilled ice, stirring rods, stoppers, pencils, backpacks, etc.

**Unauthorized Experiments**

Only those experiments authorized by the instructor are permitted. Because variations in experiments, including changes in quantities of reagents, may be dangerous, prior approval for such changes must be obtained from the instructor or Teaching Assistant.

**Clothing**

Clothing worn in the laboratory should cover as much of the body area as possible. Shorts worn without a protective full-length laboratory coat are prohibited. Women who prefer dresses to pants are encouraged to wear a long laboratory coat for additional protection. Shoes should cover the entire foot. Sandals are prohibited. Persons with long hair or beards should recognize that these constitute a fire hazard and should be especially careful.

**Flammable and Combustible Solvents and Other Materials**

Unless you have specific knowledge to the contrary, all liquids other than water should be treated as flammable or combustible and handled with great care. Flammable or combustible materials should never be heated with a flame or burner. Because hot plates are usually equipped with thermostats that can spark and ignite a vapor they should not be used. Appropriate sources of heat for flammable materials include steam baths, electrically heated oil baths, heating mantles (electrically heated jackets around the container), and infrared lamps. If an infrared lamp is used (except for microscale experiments), it should not be placed in a vertical upward orientation because of the possibility that liquid might spill onto the glass bulb and ignite.

Never add a solid (chemical or boiling chip) to a hot liquid because of the possibility that the liquid might suddenly boil in an eruptive and dangerous manner.

**Spraying or Splattering of Chemicals**

Heated containers such as flasks or test tubes should never be pointed toward another person. Similar precautions should be taken with any apparatus such as a separatory funnel, which might spill or spray a corrosive or toxic material onto another individual.

**Glass Tubing**

The following precautions should be taken when a glass tube, rod or thermometer is being inserted through the hole in a cork or rubber stopper: (1) be certain that the hole in the stopper is not too small, (2) glass tubes should always be fire polished; (3) lubricate the glass and stopper with glycerin (glycerol), silicone oil, or stopcock grease; (4) protect your hand with a cloth towel or rag; (5) grasp the tubing near to the end being inserted; (6) twist the tube through the hole with firm, steady pressure, but do not force it.

**Pipets**

Liquids should never be drawn into a pipet by mouth. Always use the rubber bulbs that are available.