

**\*\* PLEASE TAKE THIS FORM TO THE ISSUE ROOM AFTER YOU HAVE FINISHED YOUR PRESENTATIONS\*\***

## CNSM Department of Chemistry and Biochemistry

### INSTRUCTOR SCRIPT FOR STUDENT SAFETY INSTRUCTION AND VERIFICATION FORM

August, 2013

**INSTRUCTOR:** Check off each item on the green form that you address. Obtain student signatures on the reverse side of the form and return the completed form to the Chemistry Issue Room within the first two weeks of class.

**REMINDER: YOU MUST PROVIDE CONTINUOUS OVERSIGHT DURING LAB/CLASS SESSIONS!**  
The presence of the instructor in the laboratory/classroom is required in order to respond to problems and to ensure that safety rules are enforced. Except for very brief intervals, instructors must not leave their class during laboratory/class sessions. It is your responsibility to relay the relevant safety issues below to each of your students and to enforce these safety provisions throughout the semester. Call the Chemistry Issue Room x54868 or the CNSM Safety Office at x55623 if you have questions.

#### **Part I - General Safety Matters**

(These eight points apply to ALL lab classes that use chemicals)

**1. Right-to-know/Hazard Communication and Labeling:** We all have the right to know (and are expected to know) about all chemicals (including consumer products) we will be exposed to in this course. YOU must make sure that all unattended materials are labeled with the NAME (no abbreviations) of the material and its HAZARD if any (e.g. flammable, corrosive, oxidizer etc.). Even water must be labeled "WATER" (not H<sub>2</sub>O). We consider the material to be "Unattended" once the class has left the area. See the yellow CNSM Label poster hanging in this room for label details. Student unknowns must bear the ID code assigned by the Chemistry Issue Room.

**2. Material Safety Data Sheets (MSDS):** I, the Instructor, know the hazards of the materials used in this course. Additional information about the chemicals/products is available in the form of Material Safety Data Sheets from the Chemistry Issue Room, CNSM Safety Office or via the MSDS search engine on the CNSM Safety Office Webpage. There is a link to the Safety Webpage on the College homepage. Requests for MSDS' will be honored.

**3. Goggle Policy:** Chemical splash goggles with indirect vents must be worn by EVERYONE as soon as anyone in the class handles a hazardous material.

**INSTRUCTOR:** This includes you. Remember that you set the example for your students!

Goggles are required even when using very small quantities of a hazardous material, such as when you are adjusting the pH of a buffer by adding a few drops of acid or base. If you wear glasses, you MUST wear the goggles over the glasses since glasses do not provide acceptable protection. Contact lenses are

allowed when worn under goggles. Wear the appropriate eye protection when working with anything that can injure the eyes, including flying particles, laser light, UV light, electric arc etc. If I see you not wearing your goggles when hazardous materials are handled I will be required to dismiss you from the lab. Remember: **ONLY those with proper goggles will be allowed in the lab!** The bookstore sells goggles.

**4. No eating/drinking/food/smoking:** No food or drink is allowed in laboratories. You must leave these things outside, or keep them in your closed backpacks. **THIS INCLUDES PERSONAL WATER BOTTLES!**

**5. Housekeeping:** You must clean up after yourselves. Make sure spilled reagents are cleaned up promptly. Never throw chemicals in the trash or into the broken glass box, and never pour hazardous chemicals down the drain. The Issue Room will provide bags for spilled dry reagents.

***INSTRUCTOR:** Check for spilled reagents before your section begins and upon leaving for the day; especially the balance areas. If you enter your lab and find spilled reagents, please notify the Chemistry Issue Room or CNSM Safety Office upon discovery so you don't get blamed for the mess.*

If significant water is spilled on the floor, it must be cleaned up promptly to prevent slip/fall injuries and water damage to rooms below or nearby. A mop/bucket assembly is usually available from the Issue Room. If the water can't be promptly cleaned up, the Issue Room and the Safety Cabinet on the 300 level of MLSC have "kitty litter" absorbent that can be sprinkled on the spill to make it less slippery. Large water spills need professional help from campus custodians. Calling 5-4-3-5-7 (5HELP) from a campus phone or (562) 985-4357 from a cell is the way to reach custodial services.

**6. Conduct:** Inappropriate behavior will not be tolerated. Everyone must treat each other with respect. Visitors to the lab are not permitted. I, your instructor, am required to ask you to leave if you are behaving inappropriately, are disrupting class, or are refusing to promptly and fully comply with any safety policies. If you do not leave the class when asked, I may call the campus police (x54101, 562-985-4101, or via a hallway emergency phone). Police will then escort you from the class. I am required to report problems of this nature to the appropriate authority. Cell phones, iPods, radios, Blackberries, or other personal electronic devices may not be operated in any classroom or lab.

## **7. Reporting Accidents/Incidents:**

***INSTRUCTOR:** Be sure you are familiar with the guidelines that appear on the CNSM "Injury Response Procedures" posters placed in the department office.*

Please report all injuries, dangerous equipment failures, chemical spills etc. to me, and I will then document them on a standard CNSM Incident Report Form. Injured students should go to the Student Health Center for medical evaluation. You may walk there with a fellow student escort or you may be transported by University Police. Neither you nor I may clean up blood! The CNSM Safety Office will do that.

**8. Medical Costs:** NOTICE!!! The University does NOT reimburse students for treatment sought for injuries or illness, even when the student is injured IN CLASS! The treatment offered by the Student Health Center is very basic and subject to limited hours of operation. Reasonably-priced health insurance is available to students through the Student Health Center.

Please inform me if you think your health might be adversely impacted by any class activity, or if you think your state of health might adversely affect the ability of the class to perform the activity. Many types of chemicals will be used throughout the semester. I will make reasonable accommodation for you as necessary and when appropriate. You may be asked to consult your Doctor before proceeding with an activity.

## ***Part II - Safety Equipment and Procedures***

**1. Safety shower:** When working with hazardous materials that can injure the eyes or skin, a working emergency shower must be no more than “ten seconds” away. The path to the shower must be clear. The shower turns ON when the handle is pulled and will not turn off until the handle is pushed up. The injured person must stay in the shower for 15 minutes minimum. Contaminated clothing should be removed as appropriate. MOST SHOWERS HAVE NO DRAIN! Don’t worry about flooding the floor, the health of the person is more important. Never use sodium bicarbonate or other treatments to the injury. Water only!

**2. Eyewash:** The same rules apply as above. During the 15 minute flushing, the injured person should use her/his fingers to hold eyelids open and CNSM Safety should be called, and also 911 as necessary. Do not worry about flooding the floor. Kitty litter is available in the Safety Cabinet to put on the wet floor.

**3. Fire extinguishers:** These are in the room or just down the hall in a box. They should only be used by trained people. DON’T BE A HERO. Evacuate the room and pull the fire alarm as appropriate.

**4. Laboratory attire:** Close-toed footwear must be worn at all times (all semester long, from the second day of class through the last day) in any lab class that will EVER use hazardous chemicals at any point during the year. The easiest way to ensure compliance with this rule is to store a spare pair of close-toed shoes in your locker. You must also wear a lab coat or apron in this lab. Shoulders must be covered. If you forget to wear close-toed shoes, you can purchase booties as a temporary measure at the bookstore for less than \$1.00. Booties are for one-time emergency use only.

**5. Emergency evacuation procedure & route:** If the evacuation alarm sounds, or you are ordered out of the lab, remember to TAKE YOUR BACKPACK! Turn off Bunsen burners etc. if possible. EVERYONE MUST GET 200 FEET AWAY from the building – Do not bunch-up just outside the doorway!!!

***INSTRUCTOR:*** *Tell the class which exit would be safest for them.*

**6. Emergency phone boxes:** These red or blue boxes are located on walls in the science building hallways and in elevators. Use them to speak directly to CSULB police, or dial 911 from a standard campus office or pay phone. Dial 911 on a cell phone only as a last resort as they typically connect to the California Highway Patrol. The Highway Patrol people then have to transfer your call to CSULB police: an unnecessary delay. I have the campus police phone number in my cell phone.

**7. CNSM Safety Cabinet:**

***INSTRUCTOR:*** *This information is for you – no need to read this part to the class. A supply of safety items is available to you to help make your class safe. Usually the Issue Room will provide such things, but some classes are “after hours”. Help yourself to the gloves, goggles, first-aid kit, inert absorbent for spill control or slip prevention, warning signs etc. that are kept in the cabinet -- but notify CNSM Safety if*

*you take something as we want to keep these places stocked. Any MLSC key will open the Emergency Supply cabinet in the MLSC central hallway. The Emergency Response Room, HSCI-385, is unlocked.*

**8. Chemical and/or biological hoods:** These hoods are used to protect people when lab work may produce harmful or bad-smelling/smoky emissions. Gas masks, respirators or dust masks are usually not allowed for protection on campus. To use the hood for protection, the glass sash MUST be at or below the sash "stop" catch. If arrow stickers are in place, the sash MUST be at or lower than those arrow markers. Never put your head inside the fume hood when chemicals are present. Don't use the interior of the hood as a writing desk! Report defective/alarming hoods to the Issue Room or CNSM Safety promptly. An effective/suspect hood may not be used for protection.

### ***Part III - Chemical and Equipment Hazards***

**INSTRUCTOR:** *You are required to know which chemicals will be used in your lab and the appropriate use/handling/disposal procedures. Ask the course coordinator if necessary.*

**1. Chemical storage and incompatibilities:** Always return chemicals to their proper place, and store them compatibly! Hazardous liquids must be stored in secondary containers such as trays or buckets but remember to store incompatibles in separate trays. Separate acids from bases, oxidizers from organic materials such as combustibles/flammables/reducing agents etc. It is CRITICAL that you all remember that nitric acid will react violently with organic materials such as acetic acid! Always use a "bottle carrier" or other secondary containment carrier when transporting any chemicals to or from the lab.

Also watch out for flammable materials such as alcohols, acetone, ethers etc. and keep them away from ignition sources. **NEVER place them in a standard refrigerator/freezer!** If you must keep your flammables cold, store them ONLY in special "Flame-rated" refrigerators.

**2. Chemical Wastes:** Most labs have several, DIFFERENT waste containers. You MUST make sure you know which container is the correct one for your waste! Ask me if you're not sure! Otherwise you could cause a fire, explosion or some other unwanted chemical reaction. Containers must not be overfilled. It is everyone's responsibility to NOTIFY ME OR THE CHEM. ISSUE ROOM WHEN A CONTAINER IS  $\frac{3}{4}$  FULL. The Issue Room will provide new containers as needed. Waste containers must be closed when not in use. **REMEMBER -DO NOT FILL A WASTE JUG MORE THAN  $\frac{3}{4}$  FULL!!!** The waste container should have a mark showing the  $\frac{3}{4}$  level.

**INSTRUCTOR:** *EPA inspectors allow us to keep waste bottles open while labs are running back-to-back. If you are the last instructor of the day, the waste bottles must be capped before you leave. If you are the first instructor of the day and find an open waste bottle, please report it to the Issue Room.*

**3. Acids and Bases:** Watch out for these corrosives as they can cause severe burns and blindness. Never mix acids and bases in a common waste container, or it may blow up! Use caution when adding concentrated acids or bases to a solution. "Do what you ought'er, add acid to water". Neutralize tiny acid spills/drips (NOT injuries) with bicarbonate solution.

**4. Toxins:** Most of the reagents used in the lab are toxic poisons. Ingestion, inhalation, and skin contact must be avoided. Even small amounts of some chemicals can kill. Lists of the lab chemicals used are available from the Chemistry Issue Room. We Instructors will provide specific safety/handling warnings as these materials are introduced into each lab exercise.

**5. Carcinogens:** Some chemicals may be classified as carcinogenic (capable of causing cancer) in addition to the other hazardous properties (e.g. Benzene is a flammable liquid, is toxic, but also can induce leukemia with extended exposure).

**6. Radioactive materials** typically are not used in these classes.

**7. Biohazards:** Some exercises use moderately infectious microbes, human derived proteins, human blood etc. Items contaminated with these materials must be collected in specific RED Biohazard Waste containers or marked autoclave bins.

**8. Scientific glassware:** If glass tubing or a thermometer must be inserted in a rubber stopper or cork, LUBRICATE IT so it goes in easily. If you don't it may break off and cut you!

**9. Handling and reporting of chemical spills:** Notify me of any spill. I will decide if we can clean it up or will need help from the Issue Room. Some spills may only be cleaned up by professionals. I will make that decision in the event of a chemical spill. Once cleaned up, I will report the spill on the CNSM Incident Form. Please recall that any of us may call 911 on a campus telephone, and/or pull the fire alarm if necessary if a spill endangers us or others in the building.

**10. Broken glass and other sharp items:** Broken glass must be cleaned up promptly, but NEVER put sharp items in the regular trash container!! Put them in the special "Broken Glass" box. We all must make sure broken glass box does not get over-full. Chemistry Issue Room personnel will provide new boxes as needed. Also, the box must not get wet or become too heavy. Brooms and dustpans are kept in the Issue Room for laboratory for broken glass clean-up. If the broken glass is contaminated with a hazardous material, it may not go into the broken glass box. Inform me and I will work with the Issue Room on proper packaging of such contaminated broken glass. Needles must be discarded into approved needle boxes

**INSTRUCTOR:** You must follow the CNSM Safety Office "Needle Handling Policy" (on their website) when using needles.

**11. Water reactive (also air-reactive) chemicals are especially dangerous.** You will be alerted and given special instruction if such materials are introduced into the lab.

**12. Oxidizing chemicals (such as 30% hydrogen peroxide, and many chemicals whose names end in "ate") are especially dangerous** and may ignite or form explosive compounds on contact with organic materials such as flammables, combustibles. Oxidizers may not be mixed with or stored beside these materials. You will be alerted and given special instruction if oxidizers are to be handled. Remember, watch out for nitric acid, it is a very strong oxidizer and may react violently with organic materials such as acetic acid!

**13. Reproductive Hazards:** Some common chemicals, once in the body, target male and/or female reproductive systems or developing fetuses. As in the case of the toxic and carcinogenic chemicals, it is imperative that everyone in the lab strive to avoid exposure to the chemicals through use of the fume hood, gloves etc. Some low level exposures may be unavoidable. Anyone with concerns about chemical exposures associated with this lab can take the list of the chemicals associated with this lab to their medical doctor to consider if participation is appropriate.

**14. Use and handling of compressed gas:** Only a person who has completed the CNSM Gas Cylinder Safety Training may move gas cylinders or hook up regulators. Liquid nitrogen safety training will be presented if it is introduced into the lab.

**15. Equipment hazards:**

**INSTRUCTOR:** consult course coordinators and/or the Lab Manual so that you know and can relay the types of equipment that will be used during the course.

We will discuss safe use of specific equipment before using that equipment is used in this course. Some equipment is dangerous if improperly used (lasers, centrifuges etc.) Most equipment is expensive and fragile. Specific safety issues associated with equipment used in this lab will be presented when the equipment is first used. Anyone who misses all or part of that equipment safety instruction will not be allowed to use that equipment.

***Part IV-Fieldwork and Travel Hazards***

**INSTRUCTOR:** Few Chemistry/Biochemistry courses involve official off-campus activities. Should the need arise, make sure the activity complies with the CNSM Field Project Safety Guide.

student\_safety\_script\_chem\_may2012.doc