Teaching Laboratory Safety Rules

**Note:** the laboratory safety rules forms a large portion of your code of conduct in the laboratory; students need to follow the safety rules when work in laboratories.

1. All students must complete a risk assessment and have it signed off by a demonstrator prior to commencing any experimental procedure in teaching laboratories.
2. In the first lab session locate safety equipment with the aid of your demonstrator or technical staff. Find the eye-wash, emergency shower, fire extinguisher, fire blanket and all exits that are to be used in an emergency. Your demonstrator and technical staff will introduce safety equipment in the laboratory.
3. **Always use appropriate Personal Protective Equipment (PPE).** Eye protection and lab coats are compulsory at all times in the laboratory. Prescription eyeglasses should be worn under the goggles if they are normally needed. Contact lenses are discouraged, because of their tendency to harbor various fumes, and increase the likelihood of eye injury. Please notify your demonstrator/technical staff that you are wearing contact lenses if you become aware of eye irritation.
4. Disposable gloves will be provided if necessary. **Do not wear your lab coat or gloves outside the lab.**
5. Long hair in a lab is a hazard. Tie it back and keep it out of harm's way.
6. Wear clothes that cover your torso and legs. Clothing will often give a few extra seconds of protection that make the difference between a hole in the jeans and a nasty burn on your leg. Midriff T's, ripped up jeans, and mini's, although fashionable, are not acceptable.
7. Appropriate footwear needs to cover the whole of the top of the foot. Students will not be able to enter the lab wearing open toed shoes, thongs, sandals or high heels.
8. **Do not eat, drink, chew gum, apply cosmetics, or put anything into your mouth while in the laboratory.** Thousands of chemicals have been used in these lab rooms, and traces of them are on every table. Although invisible, these chemicals can still be potent. So to avoid inadvertently ingesting a harmful chemical, don't even put your pen in your mouth to hold it.
9. **Mobile Phones** are to be switched off and not used in the laboratory.
10. Do not taste any chemical. Even those that might have pleasing odors often times have harmful effects if ingested.
11. Never smell a chemical directly. Use your hand to waft the odor to your nose. This dilutes the odor and can prevent accidental burning of the nasal passages, and prevent mucus membranes from some of the more potent vapors like ammonia.
13. Never open flammable liquids near an open flame. Pressurized vapors often escape, creating the potential for a flash fire. Keep all flammable liquids away from open flames.
14. Use extreme caution when heating any liquid in a closed or constricted container. For example, when heating a liquid in a test tube, always apply heat at the interface of the solution and the air. Heating below this point can cause bumping which is the rapid evaporation and evolution of steam below a liquid layer, which causes hot dangerous fluids to be ejected from the test tube. Also, be aware of where your tube is pointed, so if bumping does occur the projectile does not hit your face or your neighbor’s face.
15. **Never remove a chemical from the laboratory for any reason.** This is grounds for expulsion and other severe disciplinary action.
16. If you are called upon to dilute or use concentrated reagent, please remember to add the
reagent to water. NEVER ADD WATER TO A CONCENTRATED REAGENT !!! A reaction, and possible spraying of the concentrated reagent may occur. Ask if advice/help is needed.

17. **Do not deviate from the planned experiment.** Mixing uncalled for chemicals is costly, and dangerous. When discovered it will result in ejection from the class.

18. **Never work in the lab alone.** You must have the authorization of your demonstrator to start a lab.

19. Always handle glass tubing with care. Many times it has burrs and hairline cracks that can break if they are over-stressed.

20. Always hold containers below face level while stirring and observing it’s contents.

21. Be aware and wary of your neighbours’ actions. Are they following the safety rules? A neighbour’s silliness off may cause you injury if you’re not watching out for them.

22. Use a fume cupboard when required by the lab manual or directed by your demonstrator. Safe fume cupboard operation requires that the opening be at the yellow and black tape marks or lower. If the hood door is open higher than that point, chemicals can actually be drawn out and into your face. Check the opening level each time you use a fume cupboard.

23. Maintain aisles free from obstruction. Close lab drawers when not in use. Push chairs in toward the counter, and keeps all unnecessary books, bags, and coats out of the aisles.

24. Wash your hands carefully after each lab, and whenever you come in contact with any substance. Hands contaminated with potentially harmful chemicals may harm your face, eyes, mouth, and mucus membranes without even being felt on your hands.

25. If any chemical comes in contact with your eye, the most effective first aid is the immediate flushing of the eye with copious amounts of water. Often, this will save the eye from additional injury and pain. There is an eye-wash in each lab. Inform the demonstrator and send someone for help, continue flushing the eye for fifteen minutes (30 minutes for bases) or until trained medical help arrives and directs you to do otherwise.

26. Any and every cut, bruise, burn, scratch, and injury that occurs in the laboratory must be reported. Even if you feel it is minor, it still should be reported to your demonstrator or technical, who will determine if it should be further medical attention is required.

27. There is nothing wrong with not knowing how to do something. There is something very wrong with trying to do something you know nothing about. PLEASE, if you have any questions or aren't sure about something, ask the lab manager.

28. **Do Not Hurry!** There is plenty of time to complete each lab exercise. Adequate pre-laboratory preparation is essential, it can cut wasted steps and speed the final outcome. Read and outline your experimental procedure before starting each lab. This is guaranteed to get you finished in plenty of time.

29. Running, horseplay or any incident involving water bottles, will result in expulsion from lab for the day and loss of all marks for that lab; a second incident will result in ejection from class.

**Housekeeping Rules:**

Good housekeeping in the laboratory will provide a safe work site in which you may be assured that chemicals are not contaminated. Please obey the following rules:

1. Notify your demonstrator or a member of the technical staff so that broken glass may be cleaned up immediately. All glass and other sharp objects should be placed in the waste glass box located in each lab. NEVER throw glass in the waste bin!

2. Needles must be disposed of in the yellow sharps containers

3. Infectious material will be disposed of in the infectious materials bins for biological waste and
chemical waste.

4. Notify your demonstrator or a member of the technical staff of any chemical spill immediately! Do not attempt to clean it up yourself unless instructed by trained personnel using proper spill management procedures.

5. Never pour any chemical down the drain! Recovery containers are usually located in each hood. If none are available or are full, ask for one in the stockroom.

6. Don't insert a pipette, or dropper into a common stock bottle. This may contaminate the bottle. Instead, pour the amount needed into a beaker and then pipette or dropper from there.

7. Always read a bottle's label twice, to avoid a mix-up. The wrong chemical can lead to accidents or unexplainable results.

8. Often times reagent bottle tops become stuck. Notify your demonstrator or a member of the technical staff if this occurs.

9. Use special care when handling bottle stoppers. Treat them as if they were contaminated, being careful not to set them down, or they will pick up contaminants from the counter. Please ensure that you replace stoppers in the bottle as soon as you have finished with that bottle.

10. Take only the portion of chemical you need. You can always return for more. Never return the unused portion as it may be contaminated.

11. At the end of each lab period, be sure to put all unknown samples back where they came from, return all checked out items to technical staff.

**Basic Prep Room Procedures:**

1. Your student card is required before quartz cuvettes, weights or spatulas can be given out.

2. If you forget your eye protection you may borrow a pair of safety glasses, however you will need to give your student card to the technical staff. If you forget on more than one occasion then you will lose 10% of your marks for each experiment after the first occasion.