Suffolk
COUNTY COMMUNITY COLLEGE

CHEMISTRY DEPARTMENT

STUDENT SAFETY PACKET

2014 - 2015

CHEMISTRY

REQUIREMENTS AND GUIDELINES

Suffolk County Community College ("the College") requires that students behave in an appropriate and professional manner and to comply with the following guidelines on safety at all times. A copy of this form MUST be retained by the student. An additional copy will be retained for the records of the Chemistry department.

General Rules

1. You are not at home. Some practices that are safe at home are not safe in a laboratory setting.
2. **LEARN** the locations of:
   a. The safety showers
   b. ALL of the eye wash stations
   c. ALL of the exits
   d. ALL of the fire extinguishers
3. Smoking is prohibited in laboratories, preparation rooms, and storage areas.
4. **DO NOT EAT or DRINK** anything (including, but not limited to water, chewing gum) in the laboratory.
5. **In case of a fire, accident or chemical spill, NOTIFY the instructor or professional assistant AT ONCE**.
6. **TURN OFF** all cell phones, beepers, pagers as they are distraction to you and others.
7. **THINK** about what you are doing. Plan ahead. If you give no thought to what you are doing, you predispose yourself and others to an accident.

Housekeeping

1. Upon entering the laboratory, place all personal belongings (books, coats, purses, backpacks, etc.) in designated areas, not on the bench tops. **DO NOT STORE ANYTHING under your feet. DO NOT place anything on or under the stool**.
2. **Keep your work area clean** at all times. In general, clean up as you work rather than do all of the cleaning at the end of the experiment.
   a. Most residues are easier to remove while they are still fresh.
   b. You must keep your limited work area clean and free of clutter.
3. DO NOT collect waste at your bench.
4. Before leaving the lab, make certain that your gas line and water are turned off.

Protective Equipment

1. Wear approved protective equipment at all times in the laboratory.
   a. Approved eye protection is flush fit, indirect vent, **chemical splash goggles**, which meet OSHA and ANSI 28.1-1979 standards. Chemical splash goggles should say "Z87.1 ANSI" approved and they **must be worn** all the time in the laboratory. You can store your goggles in a plastic bag in your drawer.
   b. A **full-length lab coat (knee length)**. Remember a lab coat is not used to cover up incorrect clothing.
2. Cover any cuts or scrapes with a sterile, waterproof bandage before attending lab.
3. Protective gloves will be provided for use; nitrile gloves for handling corrosive and/or highly toxic chemicals; and insulated gloves for hot objects.

Personal Safety

1. If you have any special medical problems, please inform the laboratory instructor. This information will be kept confidential.
2. **Appropriate clothing MUST be worn in the laboratory**. A lab coat is worn in addition to appropriate clothing, and not to compensate for inappropriate clothing.
   a. long pants (with no holes, no Capri pants nor shorts will be allowed)
   b. shoes that completely cover the foot
3. **Confine** long hair, dangling jewelry and loose clothing in the laboratory. Note that hair spray is very flammable.
4. **Never touch chemicals**. Many chemicals are absorbed through the skin. If chemicals come in contact with your skin, wash them off with large quantities of running water. Before you leave the laboratory, **wash your hands** thoroughly with soap and water AFTER everything has been cleaned up and put away.
5. Avoid breathing fumes of any kind. **In general do not smell a chemical reaction while it is occurring.** To test the smell of a vapor, collect some in a cupped hand and carefully move it towards your nose (wafting). "**NEVER**" smell any chemical directly.
6. **Do not use mouth suction** when filling pipettes with any liquid. Use a pipette pump or suction bulb.
7. **Never work alone** in the laboratory.
8. **Report all injuries** to your instructor at once. Except for very superficial injuries, you will be required to get medical treatment for cuts, burns or fume inhalation. Your instructor will arrange for someone to accompany you to the college nurse.

Safe Laboratory Practices

1. **Carefully read the experiment** before coming to the laboratory. An unprepared student is a hazard to everyone in the room.
2. **Follow the instructions carefully.** This includes using only the quantities instructed, no more. Consult your instructor if you have any doubts about the instructions in the laboratory manual. Perform no unauthorized experiments.
3. **DO NOT leave any laboratory operation or reaction unattended**.
4. **Glassware:**
   a. Always clean the glassware before you use it; and put the glassware back where it belongs after the experiment.
   b. ALWAYS check ALL glassware for chips and/or cracks. Glassware that is chipped or cracked goes into broken glass receptacle immediately, not the waste basket.
   c. REMOVE labels before you use the glassware, and at the end of the experiment.
5. **Laboratory Burners:**
   a. Always check the hose for cracks.
   b. Always check that the burner is correctly assembled.
   c. Have a "striker" ready to use BEFORE turning on the gas.
   d. DO NOT light a burner under a setup.
   e. TURN OFF the gas AT THE BENCH, not at the burner.
6. **Chemicals:**
   a. Know the hazards before you handle any chemical.
   b. In general DO NOT remove reagents from the dispensing area. In case you need to, return reagent bottles promptly to their proper places.
   c. **Never place pipettes in STOCK bottles**.
   d. **DO NOT return excess reagents to supply bottles**.
   e. DO NOT record observations, or perform chemistry at the dispensing area, return to your bench.
   f. Always pour acids into water when mixing.
   g. DO NOT turn the pipet or a medicine dropper upside down.

Waste Management:

1. **Avoid waste** of gas, water (both tap and distilled), filter paper, chemicals or materials of any kind.
2. In case of chemical spills (including water), call the instructor or the professional assistant. Clean up all spills immediately.
3. **Dispose of filter papers and contaminated papers in designated waste containers**, not the waste basket.
4. **Do not pick up broken glassware with your hands**. Use a broom and dustpan, then discard the glass in designated "Glass Waste" containers; not the waste basket.
5. **Dispose of waste chemicals in containers designated "Chemical Waste"** provided by your instructor. (Not down the drain or regular waste basket)

Equipment

1. **Balance**
   a. DO NOT weigh materials directly on the balance pan. ALWAYS place what you want to weigh in a clean dry container, weighing boat, or on a piece of clean dry balance paper.
2. **Centrifuge**
   a. Use only the test tubes indicated.
   b. The test tube MUST match in (i). diameter (ii). length and (iii). rim size
   c. The test tubes MUST be free of tape, rubber bands and stoppers.
   d. DO NOT run the centrifuge with the cover open, and allow the centrifuge to stop on its own.
3. **Hot Plate / Stirrer**
   a. DO NOT use the maximum settings. NEVER touch the heating surface, it may be very hot.
   b. If you turn the hot plate on, make sure that it gets turned off and unplugged.

General Laboratory Procedures and Practices

1. **Thermometers:**
   a. Handle with care, they are fragile. DO NOT shake them down.
   b. DO NOT cool under running water and do not use thermometer as a stirring rod.
   c. DO NOT pick up thermometers with either crucible tongs or a test tube holder.
   d. If the thermometer breaks, inform the instructor or the professional assistant immediately.
   e. Remove the thermometer adaptor to change the position of the thermometer in your set up.
2. **Test tubes**
   a. A test tube being heated or containing reacting mixtures **should never be pointed at anyone**.
   b. In general always secure the test tube near the top, not the middle or the bottom.
   c. DO NOT pick up test tubes with crucible tongs, use the test tube holder.
3. **Graduated Cylinders**
   a. DO NOT drop heavy objects into graduated cylinders. If need be, carefully slide the object down the sides.
   b. DO NOT do chemistry in the graduated cylinders.
4. **Filtration**
   a. Standard (gravity): long stem, short stem, or stem less funnel
      (i). Always support the funnel with an iron ring.
      (ii). If necessary use a clay triangle if the ring is too large to support the funnel.
   b. Vacuum:
      (i). ALWAYS clamp the vacuum filtration flask.
      (ii). ALWAYS use a filtration adaptor.
      (iii). Use filter paper that covers the perforations.

5. **Heating:** Be careful when heating liquids. Add boiling chips to avoid "bumping".
   a. To heat a beaker:
      (i). Use a small ring and wire gauze to support the beaker. The clamp must be tight.
      (ii). Use a large ring around the middle of the beaker to prevent it from falling. The clamp must be tight.
   b. To heat a flask:
      (i). Use a small ring and wire gauze to support the flask. The clamp must be tight.
      (ii). Clamp the flask to the ring stand using test tube clamp. The clamp must be tight.
   c. When using hot plates, note that there may be no visible sign that they are hot (such as a red glow). The small light means that the hot plate is on, it does not indicate temperature. **Always assume that hot plates are hot**.
   d. **Keep containers of flammable liquids** (alcohol, acetone, etc.) **away from flames**.
6. **Hot water baths:**
   a. ALWAYS monitor the level of water in the bath. Carefully add more water as needed.
   b. ALWAYS use a safety ring to hold your samples.
7. Do not force a rubber stopper or rubber tubing onto glass tubing or thermometer. Lubricate the tubing or stopper with glycerol or water then push and twist it slowly using paper or cloth toweling to protect your hands.
8. **Do not allow any liquid to come into contact with electrical cords**. Handle electrical connectors with dry hands. Do not attempt to disconnect electrical equipment that crackles, snaps, or smokes.

WE MUST ALL ADHERE TO THE LABORATORY SAFETY RULES IN ORDER TO PROVIDE A SAFE WORKING AND LEARNING ENVIRONMENT

CHEMISTRY

CHEMICAL LIST

A list of chemicals and MSDS sheets of the chemicals used in the laboratory will be made available to the student upon request. Students are encouraged to contact their instructor should they need this information.

CHEMISTRY

ACKNOWLEDGEMENT OF STUDENT RESPONSIBILITIES

STUDENT COPY

I have carefully read and reviewed the foregoing form and hereby affirm that, should any of the preceding be unclear or beyond my understanding, I have sought clarification and/or additional information from appropriate Chemistry faculty. By signing below, I hereby affirm that I have received and reviewed a copy of the* Student Safety Packet*, and I acknowledge my understanding and acceptance of all instructions and indications contained in that document and do commit myself to full compliance thereof.

x _____ _____

Name of Student {Print} *Date*

x _____ _____

Signature of Student *Date*

x _____ _____

Signature of Instructor *Date*

ASSUMPTION OF RISK & RELEASE FORM

THIS IS A RELEASE OF LEGAL RIGHTS - READ AND UNDERSTAND BEFORE SIGNING

Student Name: _____ *Date:* _____

Parent/ Legal Guardian Name: _____ *Date of Birth:* _____
(If Participant is under 18 years old) *(If Participant is under 18 years old)*

If student is under 18 years of age, a parent or legal guardian must also read and sign this form

Program: **"CHEMISTRY"**

I hereby agree as follows:

1. **Risks of Participation.** I understand and accept that participation in the above program (the "Program") offered through Suffolk County Community College (the "College") involves certain inherent risks. These include, but are not limited to: illnesses, injuries, and deaths that may occur resultant from, while participating in, or related to the Program; any losses or claims that occur resultant from, while participating in, or related to the performance of activities, duties or undertakings related to the Program; and/or other matters that may or may not be able to be anticipated. I acknowledge that I have received, and fully reviewed, the *Student Safety Packet,* and I hereby affirm that I have made my own investigation into, and am willing to accept, these risks.

2. **Exposure to Chemicals.** I understand and accept that participation in the Program may present the risk of exposure to various chemical reagents, including but not limited to, those identified on the form titled "List of Chemicals" provided upon request. *The College strongly recommends that all participants in the Program seek advisement from a properly licensed medical practitioner regarding whether their own personal healthcare status may, in any way, preclude or restrict their otherwise full engagement in Program activities.* I have made my own investigation into, and am willing to accept, the risk of exposure to the chemicals.

3. **Assumption of Risk & Release of Claims.** Knowing, understanding and accepting all the risks described above, and in consideration of being permitted to participate in the Program, I agree, on behalf of myself, my heir(s), my executor(s), assignee(s) and personal representative(s), to assume all risks and responsibilities surrounding my participation in the Program. To the maximum extent permitted by law, I release and indemnify the College and the County of Suffolk, its officers, employees and agents, from and against any present or future claim, loss or liability for injury to person or property which I may suffer, or for which I may be liable to any other person, during my participation in the Program.

I have carefully read this Release Form before signing it. No representations, statements, or inducements, oral or written, apart from the foregoing written statement, have been made. By signing below I acknowledge this agreement shall become effective only upon execution and shall be governed by the laws of the State of New York, which shall be the forum for any lawsuits filed under or incident to this agreement or to the Program.

x _____ _____
Signature of Student (Parent / Legal Guardian – check below) *Date*

□ I (A) am the parent/legal guardian of the above Student, (B) have read the foregoing Release Form, (C) am and will be legally responsible to the obligations and acts of the Student as described in this Release Form, and (D) agree, for myself and for the Student, to be bound by all of its terms.