Chem 1142 lab illustrates fundamental concepts in chemistry through qualitative and quantitative experiments. Emphasis is on the interpretation and reporting of data as well as facility in handling laboratory equipment. The lab consists of experiments that are designed to teach the following objectives:

1. To stress the importance of practicing laboratory safety.
2. To instruct students in the proper use of laboratory equipment.
3. To develop students observation and interpretation skills.
4. To provide opportunities for students to develop their communication skills.

Course Requirements:
1. splash-proof safety goggles and lab coat
2. dishwashing soap, matches, and a towel
3. attendance at all lab sessions

Safety: Safety is an essential component of each lab session. Safety training will be conducted during the first lab period and a safety quiz administered following the presentation. You will not be allowed to conduct experiments without completing the training and earning a perfect score on the quiz. Disregard for lab safety can result in your dismissal from the lab and a zero on that week’s laboratory assignment.

You must wear safety goggles, lab coat, appropriate clothing and sturdy shoes in lab.

Each student will be required to sign a “Chemistry Laboratory Safety Agreement” (attached).

Lab Format: Lab begins in ROB 213 with prelab discussion of the experiment. The general structure of a lab class period is as follows (times are approximate):
2:10 – 2:30 p.m. Pre-lab discussion (turn in pre-lab quiz)
2:30 – 5:00 a.m. Laboratory work

Expectations and Rules of Conduct
1. Demonstrate and apply safe laboratory practices at all times.
2. Come to lab prepared by reading the lab procedure and completing the assigned pre-lab quiz.
3. The use of cell phones and other mobile devices is not permitted in the pre-lab session and in the laboratory.
4. Food and beverages are not permitted in the lab.
5. Lab coats, goggles, and appropriate attire (long pants and closed footwear) are mandatory. Students without the proper attire WILL NOT be permitted to perform laboratory work.
**Electronic Resources**
Laboratory procedures and pre-lab quizzes are available on Blackboard. You should print copies of these to bring to each lab. You are required to check your Blackboard account and UST email for information and announcements pertaining to the class.

**Grading**

<table>
<thead>
<tr>
<th>Component</th>
<th>% of Grade</th>
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<tbody>
<tr>
<td>Quiz</td>
<td>20</td>
</tr>
<tr>
<td>Lab Report</td>
<td>65</td>
</tr>
<tr>
<td>Formal Report</td>
<td>15</td>
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<tr>
<td>Total</td>
<td>100</td>
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</tbody>
</table>

**Grading Scale**
A  100–93  A-  92-90
B+ 89-86  B  85-83  B-  82-80
C+ 79-76  C  75-73  C-  72-70
D+ 69-66  D  65-60  F  <60

**Lab Quizzes**
There are nine lab quizzes during the course of the semester. These quizzes will cover theory, calculations, and procedures of the current week’s lab.

**Laboratory Report**
Each laboratory topic has data sheet(s) for the recording of observations and data. Data must be entered using non-erasable ink. The use white-out, or writing in pencil followed by overwriting in ink is not permitted. If you make a mistake, draw a single line through it.

The data sheets must be initialed by the instructor before the student leaves lab. Completed data sheets are due no later than 5:00 p.m. the day after the lab was completed. Reports are to be placed in the locked box under the table-top on the table located outside lecture hall Rob 213. A penalty of 10% per day will be incurred for late reports. Lab reports must be turned in within 1 week of the due date to receive any credit.

**Formal Laboratory Report**
There is one formal laboratory report for the course. This formal report will be based on the kinetics experiment. The formal lab report is due at beginning of the pre-lab session on the date shown in the following tentative schedule. The requirements for this report are given in the procedure for this experiment.

**Important Notice**
Failure to complete a lab will result in a zero score for the lab. Failure to complete two labs will result in a failure grade (F) for the course. Everyone is expected to be present at each lab session at the assigned time. In case of illness or necessary absence, labs may be made up during another lab period if space is available. Labs must be made up as soon as possible, normally within the week the lab is scheduled. Permission to make up a lab must be obtained from both lab instructors involved prior to the lab period.
All students are expected to collect a complete set of data themselves. Sharing of data and results will result in a zero score for the lab. Discussions between students and instructors concerning procedures, techniques, calculations, etc. are expected and encouraged.

Any questionable conduct will be treated as dishonest behavior. Please see the current undergraduate catalogue for details concerning the University’s policy on academic dishonesty.

Any student requiring academic accommodations should register with the Counseling and Disability Services Office on the second floor of Crooker Center. Their phone numbers are 713-525-2169 or 713-525-6953.

**Lab Breakage Fees:** The lab glassware and equipment is not covered by the “lab fee” of the University. Make sure you have a complete set of glassware/equipment at the beginning of the semester. You will be expected to pay to replace any glassware/equipment that you broke or that is missing at the end of the semester at checkout. A list of equipment and cost will be posted in the lab.

### Chem 1142 Spring 2015 Schedule

<table>
<thead>
<tr>
<th>Week of</th>
<th>Activity</th>
<th>Lab Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Jan</td>
<td>No lab this week</td>
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<tr>
<td>19 Jan</td>
<td><strong>MLK Holiday</strong></td>
<td>No lab this week</td>
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<tr>
<td>26 Jan</td>
<td>Safety Instruction and Lab Check-in</td>
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<tr>
<td>2 Feb</td>
<td>Qualitative Analysis Known</td>
<td></td>
</tr>
<tr>
<td>9 Feb</td>
<td>Qualitative Analysis Unknown</td>
<td></td>
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<tr>
<td>16 Feb</td>
<td>Conductance</td>
<td></td>
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<tr>
<td>23 Feb</td>
<td>Colligative Properties</td>
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<tr>
<td>2 Mar</td>
<td>Heat of Neutralization</td>
<td></td>
</tr>
<tr>
<td>9 Mar</td>
<td><strong>Spring Break</strong></td>
<td>No Lab</td>
</tr>
<tr>
<td>16 Mar</td>
<td>Kinetics</td>
<td></td>
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<tr>
<td>23 Mar</td>
<td>Kinetics formal report due</td>
<td>Chemical Equilibrium</td>
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<tr>
<td>30 Mar</td>
<td>Titration curves and the pKa of Acetic Acid</td>
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<tr>
<td>6 Apr</td>
<td>Electrochemistry</td>
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<tr>
<td>13 Apr</td>
<td>Lab Check-out</td>
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Chemistry Laboratory Safety Agreement

At all times, when I am working in the Chemistry laboratory, I will use good laboratory safety practices. While in the laboratory, the following will be my guide to laboratory safety.

I WILL:

1. Wear safety goggles at all times.
2. Wear clothing that protects my body and feet and prevents accidents; including pants or knee long shorts or skirts, close-fitting sleeves, closed shoes, etc. (no shorts, no mini-skirts, no T-shirts, no high heels, no sandals, no dangling belts, no large jewelry, no loose long hair, etc.).
3. Understand what I am to do in each experiment. In doubt I will ask the instructor. Do only assigned experiments, following the procedure in the laboratory manual.
4. Be aware of the location of all safety equipment: fire extinguisher, eyewashes and showers, safety blankets, first aid kit and sand buckets.
5. Never work in the lab without the instructor being present, will carry out experiments only in the assigned laboratory room, and will not enter chemical prep rooms and storage rooms.
6. REPORT ALL ACCIDENTS TO THE INSTRUCTOR IMMEDIATELY, no matter how minor. Comment on a neighbor engaging in an unsafe practice or operation including telling the instructor if necessary.
7. Never put anything in my mouth: items, chemicals, food, or drinks. Never inhale gases or vapors unless instructed to do so.
8. Read carefully all labels on chemicals and waste bottles. Will not pour chemicals back into their original containers, and will close all containers after I use them.
9. Dispose of waste or excess chemicals according to the instructor's directions.
10. Use the fume hood when instructed to do so.
11. Keep my laboratory bench and work area clean and free of items not related to the experiment.
12. Dispose of broken glass only in the container marked for glass disposal.
13. Clean up any spill immediately by the approved method as it was explained by the instructor. Report serious spills and breaking of thermometers to the instructor.
14. Dispose of all trash in the assigned containers properly. Make sure the laboratory is clean and wash my hands before I leave.

I have read carefully the above and have listened to the discussion of Safety and Laboratory Rules. I understand their importance for the safety of all people in my laboratory. I recognize my responsibility to abide by the Safety and Laboratory Rules while in the Chemistry laboratory.

In addition, I agree to check out of the laboratory with the instructor before the end of the semester, even if I drop the course.

Chemistry Course #__________________ Section #_____________ Drawer #_____________
Signature _____________________ Name (print)____________________ Date____________
Instructor’s Name (print) ____________________________