Instructor: Dr. Richa Chandra, Assistant Professor
Email: chandrr@stthom.edu
Office: Robertson B111
Phone: 713-942-5928
Office hours: MF 1-2 PM, Tu 11 AM – 12 PM

**if you need to see me outside of these office hours, please email me to set up an appointment.**

CLASS MEETING:
Laboratory:
   - Tuesday CHEM 1142-C (1103) 2:10-5:00 PM, Robertson 213
   - Wednesday CHEM 1142-D (1104) 2:10-5:00 PM, Robertson 213

* Laptop, tablet and/or smart phone use is NOT PERMITTED during laboratory.

COREQUISITE: CHEM 1342

COURSE MATERIALS: dishwashing soap, matches, towel, lab coat, and splash-proof safety goggles

COURSE DESCRIPTION: Fundamental of Chemistry I Laboratory is the laboratory course that accompanies the lecture course General Chemistry I. The experiments conducted in this course will illustrate and reinforce chemical principles and concepts by use of quantitative and qualitative methods. Emphasis is on the interpretation and reporting of data as well as facility in handling laboratory equipment.

LEARNING OUTCOMES: Students will
- learn to prepare in order to perform a laboratory experiment efficiently and safely
- learn how to properly use and safely handle laboratory equipment and supplies
- develop competency with common chemistry laboratory techniques
- develop critical scientific thinking and analytical reasoning skills to properly analyze data and make scientific conclusions
- connect the practice of chemistry with the theory of chemistry

ELECTRONIC RESOURCES: Laboratory experiments are available on Blackboard. You are required to check your Blackboard account and UST email for such information and other important announcements for the class daily

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).
GRADING: The percent contribution of each type of assignment, participation, and exams to the final grade is shown below. For further descriptions of each category, see below.

<table>
<thead>
<tr>
<th>Assignment/Exam</th>
<th>Contribution to Final Grade</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
</tr>
<tr>
<td>Laboratory Performance &amp; Pre-Lab</td>
<td>15%</td>
</tr>
<tr>
<td>Laboratory Reports</td>
<td>50%</td>
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<tr>
<td>Formal Laboratory Report</td>
<td>15%</td>
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</tbody>
</table>

Final letter grades will then be determined by calculating the percentage points earned compared to the total number of points possible, and grades will be assigned on the following scale. Final letter grades may be reported with a plus or minus.

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

QUizzes: Quizzes will take place at the beginning of lecture. This will be prior to the pre-lab lecture. Following the safety training of the first lab period, a quiz will be administered after the presentation. This will be the only quiz that will take place immediately after the pre-lab presentation. You will not be allowed to conduct experiments without completing the training and earning a perfect score or 100% on the quiz.

Laboratory Performance: You will be evaluated and graded on your laboratory performance in terms of appropriate lab attire, timeliness, safety, laboratory skills, preparedness for the experimental procedure, cleanliness and respect for your classmates, the common areas in the laboratory and your personal work space. I will be watching for all of the above and also keep track of how you record (data sheets) and perform the experiment. In terms of preparedness, your pre-lab write up should be complete before you enter the classroom. The pre-lab is a one-page handwritten outline of the experimental procedure. DO NOT COPY AND PASTE FROM THE ORIGINAL DOCUMENT. You will bring this outline and print outs of the data sheets stapled together.

Pre-Lab: At the beginning of lab, I will check your pre-lab as you walk into the laboratory. During the pre-lab lecture, we will have a brief discussion to clarify and answer questions you have about the experimental procedure. During the lab, you will record your data only on your printed data sheets. YOU ARE NOT ALLOWED TO HAVE THE PROCEDURAL DOCUMENTS THAT ARE PROVIDED ON BLACKBOARD. Your pre-lab must be complete enough for you to perform the experiment without these documents. The data sheets must be completed in non-erasable ink (no pencils, write-overs or white out). You will lose points from your Laboratory Performance grade for infractions on these points. Your TA or I must initial all data sheets before you leave the lab. **There are no make-up labs.**

Laboratory Reports: The next lab meeting following the completion of a laboratory experiment, you will turn in your pre-lab experimental procedure, data sheets and follow-up questions stapled together for grading. These reports will be 50% of your total grade and will be graded for completeness and correctness. Late work will not be accepted.

Formal Laboratory Report: There will be one formal report during the summer; details will be provided at a later time.
ACADEMIC HONESTY: I expect that you do all work within this course (including written in class assignments, homework, and exams) with honesty and integrity. Academic Dishonesty includes (but not limited to) cheating on exams or quizzes and plagiarizing from sources such as textbooks, websites, or classmates work. I consider it academically dishonest to submit work plagiarized from any source including a solutions manual or exam/homework file.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES: University of St. Thomas will make reasonable accommodations for students with documented disabilities. To arrange accommodation students should contact the Counseling and Disability Services Office in Crooker Center. This office can be reached at (713) 525-2169 or 6953. It is the student’s responsibility to discuss any necessary accommodations with the appropriate faculty member. Testing accommodations are provided at the Career Services and Testing Center as a convenience for faculty and students. The Career Services and Testing Center is located at 3909 Graustark on the second floor of Crooker Center. The center works on an appointment basis. The student is responsible for making his/her own appointment by speaking with a Testing Center staff member.

UPDATED COURSE INFORMATION: Occasionally, I will send out an email or post an announcement on Blackboard. You are required to use your UST account to access such updated course information.

DISCLAIMER: I will adhere to the schedule and policies in this document as much as possible, but changes may be made during the semester. Announcements to this effect will be announced in lecture, by email or on your Blackboard account.

COURSE ETIQUETTE: Please be respectful of your classmates and your professor. Safety in the laboratory is paramount therefore no horsing around. If you are not respectful of the professor and your classmates, I will deduct points earned from your laboratory performance and ask you to leave. To reiterate, the use of electronic devices is prohibited in the laboratory. If you have an emergency and need the use of your mobile devices for personal use, please step outside of the class to attend to it.
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) ____________________________
### Tentative Course Schedule

*Note: This is a tentative schedule for laboratory experiments and may change as the semester progresses.*

<table>
<thead>
<tr>
<th>WEEK OF</th>
<th>LABORATORY EXPERIMENT</th>
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<tbody>
<tr>
<td>Jan 12</td>
<td>No Labs This Week</td>
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<tr>
<td>Jan 19</td>
<td><em>MLK Holiday (NO LABS THIS WEEK)</em></td>
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<tr>
<td>Jan 26</td>
<td>Safety Instruction and Lab Check-In</td>
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<tr>
<td>Feb 2</td>
<td>Qualitative Analysis of Group 1 and II Cations (Known)</td>
</tr>
<tr>
<td>Feb 9</td>
<td>Qualitative Analysis of Group 1 and II Cations (Unknown)</td>
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<tr>
<td>Feb 16</td>
<td>Conductance of Solutions</td>
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<tr>
<td>Feb 23</td>
<td>Colligative Properties</td>
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<tr>
<td>Mar 2</td>
<td>Heat of Neutralization</td>
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<tr>
<td>Mar 9</td>
<td><em>Spring Break (NO LABS THIS WEEK)</em></td>
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<tr>
<td>Mar 16</td>
<td>Kinetics of Crystal Violet with Sodium Hydroxide</td>
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<tr>
<td>Mar 23</td>
<td>Chemical Equilibria** (I WILL NOT BE HERE UNTIL FRIDAY)</td>
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<tr>
<td>Mar 30</td>
<td>Titration Curves and the pKa of Acetic Acid <em>(Kinetics Formal Lab Reports Due)</em></td>
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<tr>
<td>Apr 6</td>
<td>Electrochemistry</td>
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<tr>
<td>Apr 13</td>
<td>Lab Check-Out</td>
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