CHM 121 General Chemistry I Lab   Section 15001 Fall 2018

Instructor: Dr. Myungshim Kang
Office: 6S-252
Email: Myungshim.kang@csi.cuny.edu
Office Hour: By appointment

Class Hour: Mon, 08:20pm-10:50pm
Location: 6S-251
*CSI Handout*
    Available ONLY at CSI bookstore. DO NOT rent the lab manual online because you are required to turn in the original data sheets and post lab assignment pages from the lab manual. Photo copies are not accepted.

Course description:
Experiments illustrate crucial chemical concepts discussed in lectures and highlight current interpretations of experimental data, based on modern lab techniques.

Learning Objectives:
1. The student will learn how to work safely in a chemical laboratory
2. The student will demonstrate knowledge of the use of chemical experimental setups
3. The student will be able to collect and analyze data
4. The student will communicate his or her findings by writing concise reports

Class Attendance and Withdraw Policy:
You are required to attend each class on time. A discussion of each experiment will be provided before you start the experiments and the in-class quizzes will also be held at the beginning of your class. No make-up lab, quiz and exam will be arranged. Lateness is not acceptable.

You need to complete the experiments during the class hour in order to receive credit for the course.

If you miss two or more lab classes, you will receive an F grade regardless your final score of the course.

According to CSI Fall 2018 Academic Calendar, the last day to withdraw with the grade of "W" without permission of an instructor or Chairperson is November 6, 2018. From November 7, 2018 to December 5, 2018, withdrawal from a chemistry course is possible, with the permission given under the discretion of the instructor and the Chairperson. The Chemistry Department policy does not permit the withdrawal from a chemistry course after December 5, 2018.

Lab Reports:
Lab report is very important for the lab course. Each lab report is 100 points (including 20 points of pre-lab quiz, 40 points of data sheet and calculations, 30 points of post-lab assignments and 10 points of experiment discussion).

You should be prepared before you attend the lab course. To understand the purpose and the procedure of the experiment, you need to read the lab manual, text book, take pre-lab notes
and study pre-lab assignment before the class. **Weekly in-class close-book quizzes will be given at the beginning of each lab.** Questions may come directly from the pre-lab questions in your lab manual. On the days of midterm exam, you will have a regular quiz and a midterm exam. No make-up quiz will be arranged.

Print your result directly on the data sheet on the day of your experiment. Your data sheet and calculations needs to be checked and signed by your instructor before you leave the lab of the day to earn the credit. To earn the full credit (40 points) of the data sheet, your data and results needs to be accurate with proper formulas, units and significant figure numbers. Calculation without showing your work receives no credit.

Answer all the assigned questions from post-lab questions section in your lab manual. Print your answers clearly on the lab manual.

Type your experiment discussion in one page (around 200-300 words and double spaced). The following information should be included: (a) title; (b) your name and your partner’s name; (c) date of the experiment; (d) the purpose of the lab; (e) the fundamental principle or theory behind the experiment; (f) the brief procedure(s) or methods to reach the goal of the experiment; (g) your experimental results and finding and discussion about the possible experimental error(s); (h) conclusion. Do NOT give detailed procedures in discussion.

Your post-lab is due on the day of the following week of class. Staple your post-lab in the order of experiment discussion sheet, data sheets/calculation and post-lab assignment. You must turn in your lab report at the beginning the class to earn the credit. If you are absent, no post-lab including data sheet, post-lab assignment and experiment discussion of the lab will be accepted and graded.

The lab report (pre-lab and post-lab) counts 60% of the lab grade. Late reports will be accepted but you will receive a penalty by losing 3 points per late day per assignment (9 points will be deducted if you turn in your post-lab packet one day late). Lab reports later than one week will not be accepted.

**Safety and Cleanliness:**

Safety is extremely important in chemistry laboratory. To be safe, you should be aware of the safety policies and practices in your laboratory manual safety section **Page 1-9.** You must sign the lab safety agreement on Page 9 and be checked by your instructor before you perform any experiment in the lab.

Safety goggle should be worn at any period of the class. You are not allowed to be in the laboratory without wearing the safety goggle. Gloves should be worn when you handle any chemicals.

You will be deducted 1 point for each violation from your final score.

**Attitude:**

Disruptive behavior is unacceptable in the lab, and will NOT be tolerated. Late arrival, noisy devices, inconsiderate behavior, and talking during lectures, will not be tolerated. Discussion of scientific issues is highly welcome to advance our knowledge, but emotional arguments and quarrels are prohibited.

**Midterm Exam (10 %) and Final Exam (25%)**

One midterm exam will be given in the middle of the semester in class. Midterm exam date will be announced in class. Midterm counts 10 % of your lab grade.
There will be a departmental final exam in the final week (December 13-21). Final exam counts 25% of your lab grade.

No make-up labs, quizzes and exams will be arranged.

**Academic Honesty:**
All students are expected to follow the CUNY policies related to academic integrity. You will work with your lab partner during the experiment. You help with each other while doing the experiment. However, you must work independently on your pre-labs, data sheet/calculation and post-labs. You shouldn't copy any other person's work including any online resources as your own. Students must work independently on all quizzes and exams. Any forms of cheating or plagiarism in lab report or tests will result in a zero point for your assignment and may result an F grade of the course. Also, any academic dishonesty will be reported to the college authority.

**Center for Student Accessibility:**
If you believe that you have a disability requiring an accommodation, please contact the Center for Student Accessibility at 718-982-2510 or visit the Center in 1P-101. You can also check out their website at [www.csi.cuny.edu/csa/](http://www.csi.cuny.edu/csa/). You must notify your instructor and lab technician about the accommodation at the beginning of the semester.

**Grading:**
- Lab reports – 60%
- Midterm Exam – 10%
- Final Exam – 25%
- Safety, Cleanliness and Attitude – 5%
### Lab Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Experiment</th>
<th>Lab material</th>
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<tbody>
<tr>
<td>August 27</td>
<td>Check-In and Lab Safety</td>
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<tr>
<td>September 5</td>
<td>Relating Mass and Volume</td>
<td>Lab manual</td>
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<td>September 17</td>
<td>Physical and Chemical Changes</td>
<td>Lab manual</td>
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<td>September 24</td>
<td>Separating and Identifying FD&amp;C Dyes Using Paper Chromatography</td>
<td>Lab manual</td>
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<td>October 1</td>
<td>Determining the Empirical Formula of a Compound</td>
<td>Lab manual</td>
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<tr>
<td>October 15</td>
<td>Properties and Reactions of Acids and Bases</td>
<td>Lab manual</td>
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<tr>
<td>October 22</td>
<td>Observing Single Replacement Reactions</td>
<td>Lab manual</td>
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<tr>
<td>October 29</td>
<td>Precipitating Calcium Carbonate</td>
<td>CSI Handout</td>
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<tr>
<td>November 5</td>
<td>Determining the Molar Concentration of a Sodium Hydroxide Solution and Dilution</td>
<td>Lab manual, CSI Handout</td>
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<td>November 12</td>
<td>Charles’s Law</td>
<td>Lab manual</td>
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<td>November 19</td>
<td>Evaluation of the Gas Law Constant</td>
<td>Lab manual</td>
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<td>November 26</td>
<td>Temperature Change, Heat of Reaction and Enthalpy Change of Neutralization Reactions</td>
<td>Lab manual</td>
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<tr>
<td>December 3</td>
<td>Seeing is believing: Models of Molecular Structure</td>
<td>CSI Handout</td>
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<td>December 10</td>
<td>Review and Check out</td>
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<tr>
<td>(December 13-21)</td>
<td>Final Examination</td>
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CHM121 Experiment Discussion (15 points scale)

Title: ________________ (1 points)

Name:______________, Section ________

Partner’s name: ________________

Instructor: _______________

Date of Experiment: _____________

Purpose (2 points)

In your own words state the experiment purpose in one or two sentences. Don’t copy from the manual.

Fundamental principle or theory behind the experiment (2 points)

Describe basic chemistry principle you used in the experiment, include any balanced chemical equations and formula.

Method: (2 points)

Do not give detailed procedures (no credit will be given if you copy the procedure from manual). Just briefly describe procedure(s) or methods to reach the goal of the experiment.

Discussion: (6 points)

Use your data to explain why and how your data support your findings. Your data should be reported and analyzed. Discuss about the possible experimental error(s) and what you have learned from this experiment.

Conclusion: (2 points)

Briefly conclude your results.
Please read the laboratory syllabus and policy carefully. Sign and return this form to your instructor.

By signing this form, you agree the following rules:

(1) I have thoroughly read the information above and I understand the policies of the laboratory.

(2) I agree that cheating, copying or plagiarism of any laboratory reports and tests will result in a failing grade.

Print your name:____________________

Signature:____________________

Date:____________________
## CHEMISTRY 121 LABORATORY SCHEDULE

**TEXT:** CHEMISTRY 121—Cengage Learning Custom Publishing, Mason, OHIO.  
**ISBN:** 978-1-305-01125-0

<table>
<thead>
<tr>
<th>WEEK</th>
<th>EXPERIMENT</th>
<th>NOTES</th>
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| 1    | Check-in; Safety Orientation  
      | Safety Practices in the Chemistry Laboratory | CSI Handout  
      |          | TECH 0380 |
| 2    | Relating Mass & Volume | PROP 0484 |
| 3    | Physical and Chemicals Changes  
      | DO Parts A, C, D & E ONLY | PROP 2114 |
| 4    | Separating and Identifying FD & C Dyes Using Paper Chromatography  
      | DO Part I “Characterizing FD&C Dyes and Identifying FD & C Dyes in Unknown Mixtures” ONLY | ANAL 0620 |
| 5    | Determining the Empirical Formula of a Compound | STOI 0423 |
| 6    | Properties & Reactions of Acids & Bases | REAC 2183 |
| 7    | Observing Single Replacement Reactions | REAC 0610 |
| 8    | Precipitating Calcium Carbonate | CSI Handout |
| 9    | Determining the Molar Concentration of a Sodium Hydroxide Solution  
      | DO Parts III, IV & V ONLY | ANAL 0394 |
| 10   | Charles’s Law | PROP 0384 |
| 11   | Evaluation of the Gas Law Constant | PROP 0332 |
| 12   | Temperature Change, Heat of Reaction, and Enthalpy Change for Neutralization Reactions | THER 0901 |
| 13   | Seeing is Believing: Models of Molecular Structure | CSI Handout |
| 14   | Check-Out | |