CHEM 114.1- General Chemistry II Laboratory
Sections 2-6

Laboratory Syllabus

I. Laboratory Course Format- Hybrid
A. The lab course this semester unless otherwise directed by the State of New York, City University of New York, and Department of Chemistry and Biochemistry will be a hybrid in-person and online course.
B. Some experiments will be in-person (LAB), others online synchronously with your officially scheduled lab time requiring you to log in on time (SYN), and still others offline with no set start time (ASY), but all lab reports are still due at specified time; see §IX.

II. General Laboratory Rules
A. Always wear safety goggles and contact lenses not allowed.
B. No short pants, skirts, nor open toe shoes are allowed, and tie back long hair.
C. NO food, beverages, gun, horseplay, nor stunt experiments allowed.
D. No computer nor tablet nor cell phone use in the laboratory during class activities.

III. Laboratory Manual: posted on BlackBoard

IV. Laboratory Reports
A. A report is required for EACH experiment.
B. Lab reports are always due next lab session, for any lab. All lab reports will be electronically submitted through Blackboard; upload links will be established in each section on Blackboard for each lab report. Late reports are strongly discouraged, and they will receive a severe reduction in points, as determined by your instructor.
C. Format:
1. **Heading:** Always be sure your name, section number, experiment title AND date the experiment was performed is included.
2. **Abstract:** This is one short paragraph summarizing your entire paper.
3. **Introduction:** Explain concisely the chemistry of the experiment, including any equations and other scientific and mathematical explanations; i.e., the theory. No fluff, please.
4. **Experimental:** A concise but complete summary of the steps, materials, and apparatus of the experiment.
5. **Data:** Include your original data; i.e., the “carbon copy” of measurements or observations you directly recorded during the experiment stapled to back of report. However, rewritten data are to be included in the Data section of the report.
6. **Calculations and Results:** Show all work; but if there is a repetitive calculation, you need only show the equation and its use only once; after that, just list the answer. Include here also any graphs or diagrams that may be required.
7. **Discussion:** State whether results were good or bad, and reasons why, what may have affected them, and any problems with the experiment. Be brief but complete. There may be questions you must answer, or blanks from the manual to fill; work them into your discussion.
8. **Conclusion:** Summarize your final conclusions in your discussion section along with your results and very basically what you did. (The discussion section is where you actually draw your important conclusions.)
V. Grading
A. Late reports are not acceptable and your instructor will deduct up to or at least 50% off the report.
B. Reports will be graded also for conformance to the above described format; the apportionment of points to be determined by your instructor.
C. Your instructor may drop one report, of the lowest grade, from your totals.
D. Apportionment of course points is also to be determined by your instructor, but there will be points for your performance while in the laboratory. The criteria are as follows:
   1. safety - if you do not work safely, your instructor will deduct points at his discretion
   2. independence - your ability to work and think independently, as determined by your instructor
   3. efficiency - your ability to correctly and quickly accomplish the experiment
   4. effectiveness - and of course, how well the results turned out

VI. Laboratory Requirements:
A. PRE-LAB: Write, in your own words, the theory and procedure for the experiment in your notebook before coming to lab. Therefore, all notes must be preceded by the pre-lab. Consult the experiment schedule in §IX below for the order of experiments.
   - For in-person labs (LAB), the pre-labs will be signed by the instructor as usual. For SYN and ASY labs, students will be responsible for taking a photo of the prelab and calculations from their notebook and including it in their report.
B. If you drop the course, you must check-out ASAP! Otherwise, you do so at the normal time on the final check-out day. If you do not check-out you will be charged a fine as listed in the Stockroom.
C. Eye protection must be worn at all times in the lab; penalty for failure to do so is a 0 (zero) for the day and/or dismissal from that day’s lab with no possibility of make-up.
D. You must watch the Department’s ACS lab safety video during the first lab. If for some reason you missed it then, you must immediately arrange with the Chemistry Stockroom to watch it.
E. You must have safety goggles, a lab coat and a combination lock; we will issue these to you.
F. You must have an approved laboratory notebook with carbonless copy pages (for example, ISBN 978-1-930882-74-4 or 978-1-617319-14-3; there are other acceptable ones), and use it; do not take any notes on scrap paper or other things.
G. You will need a scientific calculator. and either a USB flash drive or a SD card.
H. You will read the day’s experiment before coming to lab, and bring a copy with you.

VII. MISSED LABS
A. Must be made up as soon as possible; consult your instructor and the stockroom to arrange a time. Be warned this will be very difficult in these partial quarantine times.
B. Must fill out make-up form, signed by your instructor first, then by the make-up instructor right after you finish the experiment. One copy goes to your instructor, one to the stockroom, and one to you (it is in triplicate).
C. Be sure to get make-up instructor to sign or initial your notes and data. The lab report goes, of course, to your instructor.
D. Any potential make-up instructor has the right to deny permission to attend his section.

VIII. Safety: APPROVED MASKS COVERING NOSE AND MOUTH, goggles. long pants or skirts, closed toe shoes, and long hair tied back are required. Eating, drinking, gum chewing, horseplay, stunt experiments, and contact lenses are not allowed, wear glasses to lab instead. Safety shower, eyewash, and fire extinguisher locations must be noted. Chemical waste handling protocols must be observed; if in doubt ask! Points will be deducted for unsafe practices or violations of waste protocols, and you may be ejected from lab and receive a
zero (0) for that day’s work. You must watch the safety video before any work starts this semester, regardless of whether you have seen it before. If you miss it, tell your instructor to arrange a session for you as soon as possible.

IX. Code of Conduct

A. Plagiarism- Plagiarism or any other form of cheating is not tolerated and will be severely punished by point and other penalties and/or referral to the Chairman and the Dean; any assignment involved will receive a grade of zero (0). Failure to properly cite a source may be considered plagiarism.

B. Inappropriate behavior, e.g., horseplay or off-color language, will not be tolerated and may lead to expulsion from class and a zero if during an examination or assignment. You may not allow non-class members to log in during synchronous sessions.

X. Schedule of Experiments:

<table>
<thead>
<tr>
<th>Week</th>
<th>Group #1</th>
<th>Group #2</th>
<th>Group #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intro to Lab &amp; Exploring Boiling Points SYN</td>
<td>Intro to Lab &amp; Exploring Boiling Points SYN</td>
<td>Intro to Lab &amp; Exploring Boiling Points SYN</td>
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<tr>
<td>2</td>
<td>Beer’s Law SYN</td>
<td>Beer’s Law SYN</td>
<td>Beer’s Law SYN</td>
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<td>3</td>
<td>Check in – Fe Titration LAB</td>
<td>Heats of Solution ASY</td>
<td>van’t Hoff and Osmosis ASY</td>
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<tr>
<td>4</td>
<td>van’t Hoff and Osmosis ASY</td>
<td>Check in – Fe Titration LAB</td>
<td>Heats of Solution ASY</td>
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<tr>
<td>5</td>
<td>Heats of Solution ASY</td>
<td>van’t Hoff and Osmosis ASY</td>
<td>Check in – Fe Titration LAB</td>
</tr>
<tr>
<td>6</td>
<td>Analyzing Complex Mixture LAB</td>
<td>Kinetics ASY</td>
<td>Equilibrium Pt. I ASY</td>
</tr>
<tr>
<td>7</td>
<td>Equilibrium Pt. I ASY</td>
<td>Analyzing Complex Mixture LAB</td>
<td>Kinetics ASY</td>
</tr>
<tr>
<td>8</td>
<td>Kinetics ASY</td>
<td>Equilibrium Pt. I ASY</td>
<td>Analyzing Complex Mixture LAB</td>
</tr>
<tr>
<td>9</td>
<td>Equilibrium Pt. II LAB - Checkout</td>
<td>Complex Ion ASY</td>
<td>Acids, Bases, Buffers &amp; Salts ASY</td>
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<tr>
<td>10</td>
<td>Acids, Bases, Buffers &amp; Salts ASY</td>
<td>Equilibrium Pt. II LAB - Checkout</td>
<td>Complex Ion ASY</td>
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<tr>
<td>11</td>
<td>Complex Ion ASY</td>
<td>Acids, Bases, Buffers &amp; Salts ASY</td>
<td>Equilibrium Pt. II LAB - Checkout</td>
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<td>DIY Qual SYN</td>
<td>DIY Qual SYN</td>
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<td>Acid Salt Id. SYN</td>
<td>Acid Salt Id. SYN</td>
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<td>14</td>
<td>Electrochemistry SYN</td>
<td>Electrochemistry SYN</td>
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Explanation of three-letter codes:
LAB- In-person lab; presence in assigned lab room in Remsen Hall is required to perform lab
SYN- Synchronous lab; this is done online but you must log into class at your official lab time
ASY- Asynchronous lab; this is done offline, no strictly set time except for report due date

XI. COVID-19 Concerns:
If you cannot attend the in-person (LAB) sessions due to COVID-19 concerns, i.e., you have a medical condition or if you live with someone who has pre-existing medical conditions which put you or them at high medical risk from COVID-19 exposure, inform your instructor and Dr. Edward G. Look, 114.1 coordinator (edward.look@qc.cuny.edu), and you may be exempted from the in-person sessions and alternate assignments for those lab sessions provided. See also the New York State COVID-19 FAQ 4/15/20 p.2; link: https://coronavirus.health.ny.gov/system/files/documents/2020/04/doh_covid19_faqs_updated_041720_2.pdf

XII. CUNY Legal Notice on Live Recordings:
Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely for the purpose of creating a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.