CHEMISTRY 102L COURSE SYLLABUS: SPRING - 2015
Quantitative Chemistry Laboratory II

LAB INSTRUCTOR AND SUPERVISOR: Dr. Ginnie Hench
EMAIL: ghench@med.unc.edu
OFFICE: Morehead Labs Room 106
INSTRUCTOR’S OFFICE HOURS: Appointments can be requested via email

LAB CLASS MEETING TIMES:
- Monday and Wednesday labs: 1:25 pm – 5:30 pm
- Tuesday and Thursday afternoon labs: 1 pm – 4:50 pm
- Tuesday and Thursday evening labs: 5:30 pm – 9:20 pm

COURSE DESCRIPTION: CHEM102L is the second course in a two-semester sequence. CHEM102L covers gases, intermolecular forces, solutions, reaction rates, and chemical equilibria including acid-base chemistry, thermochemistry, and electrochemistry.

PREREQUISITES: CHEM101 and CHEM101L. A “C – ” or better in CHEM 101 is required.
It is an honor code violation to be enrolled in a course while lacking the proper pre- or co-requisites.

ATTENDANCE DURING LAB CHECK-IN WEEK (JANUARY 12TH-15TH) IS MANDATORY
- Lab check-in for Chemistry 102L will take place in Murray Hall Room G202 during the regular meeting time for your section during the week of January 12th
- Read the check-in information posted on the Sakai site, wear attire appropriate for the laboratory and bring the required course pack and equipment (see “Textbook and Equipment” listed below)
- Registered students who do not attend the lab check-in and safety training will automatically be dropped from the lab.
- Every student must have the Spring 2015 General Chemistry 102 Lab: Student Packet to check-in to lab. The forms required to complete the check-in procedure are contained in the lab manual.

TEXTBOOK & EQUIPMENT
- **Required:** The *Spring 2015 General Chemistry 102 Lab: Student Packet* available from UNC Student Stores, Course Pack Publishing. Every student must purchase a lab manual.
  - **NOTE:** Using any student packet/lab manual other than the *Spring 2015 General Chemistry 102 Lab: Student Packet* will be treated as an Honor Code Violation.
- **Required:** Laboratory notebook. Pages must be pre-numbered and it must have carbonless duplicate pages. You may use an old lab notebook if it meets the criteria listed here. Alpha Chi Sigma (AXE) chemistry fraternity will be selling lab notebooks outside of Morehead Labs 102 right after the lab check-in lectures for $12.00 (cash or check).
- **Required:** Lab goggles (NOT safety glasses). If you forget your goggles you will have to purchase a new pair. However, if you have never had a chemistry lab at UNC you will receive a free pair the day of lab check-in. You will receive instructions during the lab check-in lecture.
- **Required:** Lab Coat
  - Lab coats must stay in the lab room and may not be taken with you once you finish the lab.
- **Required:** Laptop computer with the required software (see Laptop Policy on Sakai)
- Flash drive – **Strongly Recommended**
- Calculator - **Recommended**
**CLASS WEBSITE:** The lab course syllabus, software, announcements, grades and other important lab information will be available on Sakai ([https://sakai.unc.edu](https://sakai.unc.edu)).

- Lab report templates are accessed and submitted through the “Assignment” feature on Sakai. Therefore, you must have access to the Sakai site to participate in CHEM102L.
- If you cannot login to Sakai, please email Dr. Ginnie Hench ([ghench@med.unc.edu](mailto:ghench@med.unc.edu))

**LAPTOP POLICY:** A laptop computer that meets the minimum specifications defined by the Carolina Computing Initiative (CCI) is a requirement for the course. You are also required to have the following applications installed on your laptop:

- Microsoft Excel
- Microsoft Word with equation editor (free from the ITRC)
- PASCO’s Capstone software

**TA OFFICE HOURS:** You can attend office hours anytime when they are held by 102L TAs. 102L TA office hours will be held in Morehead Labs room 408 at various times between 9 am and 5 pm, Monday through Friday. You will need to check the schedule that is posted on Sakai to know exactly when someone will be available.

- Do not wait until the night before or the day of your lab to contact your TA for help.
- You are encouraged to seek out assistance, but be respectful of your TA’s time.

**HONOR CODE:** In signing the “Chemistry Lab Contract” (page 6-7 in your Student Packet), you are acknowledging that you have read and understand the Honor Code and Academic Integrity Policy that is spelled out below.

The Department of Chemistry faculty adopted the following policy on Sept. 9, 1977:

> “Since all graded work (including homework to be collected, quizzes, papers, mid-term examinations, final examination, research proposals laboratory results and reports) may be used in the determination of academic progress, no collaboration on this work is permitted unless the instructor explicitly indicates that some specific degree of collaboration is allowed. This statement is not intended to discourage students from studying together or working together on assignments which are not to be collected.”

Behavior in this course is governed by the University of North Carolina’s Honor System and the codes contained therein. The entire code, and information pertaining to the code, can be found at: [https://studentconduct.unc.edu/](https://studentconduct.unc.edu/).

The guiding principle of academic integrity is that the work submitted by a student must be that student’s own work. In this course students will sometimes be required to work in pairs or groups to collect experimental data. This can lead to misunderstandings regarding academic integrity. In those cases when you work with other students, you must clearly indicate on your Title Page who your partner or partners were.

**When writing up your lab report, there is no collaborative work.** You must write your own report, answer your own questions, and work up your own data. If you are having difficulties or have questions you need to see your TA for help. Collaboration on lab reports is a violation of the University Honor Code and will be treated as such.

A second area where misunderstandings of academic integrity arise is with regards to when you should reference external sources in your lab report. The submission of any material that is substantially
the same as some other written document or source (i.e., a journal article, a textbook, a lab manual, a book) that is not properly referenced constitutes a violation of academic integrity. Using someone else’s words or ideas without giving credit for their work is called plagiarism. Furthermore, simply rearranging the words from a source to make them seem like your own words is also plagiarism.

The following situations below will be treated as honor code violations.

- Unauthorized collaboration. NOTE: Unauthorized collaboration is defined differently for each lab course. Please read the following points developed to define what constitutes unauthorized collaboration in General Chemistry (CHEM101L and CHEM102L):
  - All lab reports in General Chemistry must be written independently. During this laboratory course, you will be working with a lab partner on all experiments. We encourage you to discuss procedural concerns or conceptual components of the experiment with your lab partner or with a TA. However, the work that you submit for a grade must reflect your own effort and understanding.
  - In general chemistry, you and your lab partner are expected to enter data directly into an Excel spreadsheet during the experimental procedure. You and your lab partner may exchange spreadsheets containing data that you collected together before either of you starts to perform any data analysis steps, including calculations, graphs and tables.
    - In the event that exceptions to this guideline is allowed, you will receive instructions detailing where in a particular experimental protocol that graphs or tables may be shared between lab partners.
  - You will have access to the lab report template during lab and these templates must be completed independently. Lab report word documents should never be shared.

- Plagiarism. The ideas presented in your report must be your own. If you present someone else’s ideas or work (from books, old lab reports, the Web, the lab manual) as your own, this is plagiarism. You can present facts from an outside source, as long as you properly reference the source.

- Allowing students to use your work as their own. Do not allow your partner or other students to have access to your lab reports (the lab report is the completed template word document). You may share data if you collected the data together, but everything else (calculations, graphs, tables) must be done alone.

- Using old lab reports, even if you just want to glance over them, is an honor code violation.

- Do not rearrange a paragraph or some other piece of work that is not yours in the hope of disguising the work as your own.

- Using an old lab manual from a previous semester.

Established by the Undergraduate Labs Committee
April 2014

Attendance: Attendance at every lab is of the utmost importance. Therefore, only extenuating circumstances will warrant an excused lab absence. In order to obtain an excused absence, students must submit a request following the instructions outlined in the “Absence Policy”, which can be found on Sakai under Resources in the Course Policy Information folder. We are not offering make-up labs for excused absences in CHEM101L or CHEM102L. Instead of doing a make-up lab, students will receive a make-up assignment from their TA that will be due one week from the time when the TA emails it to the student.
• Any unexcused absence will result in a 0 for all possible points associated with a given experiment (0 out of 90 total points/experiment).
• Three (3) or more absences (including excused absences) will result in a FAILING GRADE for Chemistry 101L and 102L. There will be no exceptions to this rule.

ASSIGNMENTS AND GRADING: Assignment formats and expectations are described in detail in the “Assignment Expectations and Assessment” file, which can be found on Sakai under Resources in the Course Policy Information folder. Points available in this class will be assigned in the following manner:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Safety Quiz</td>
<td>60</td>
</tr>
<tr>
<td>Pre-Lab</td>
<td>140 (20 pts/experiment x 7*)</td>
</tr>
<tr>
<td>Performance</td>
<td>80      (10 pts/experiment x 8*)</td>
</tr>
<tr>
<td>Lab Report</td>
<td>480     (60 pts/experiment x 8*)</td>
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<tr>
<td>Lab Final</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>960 points</strong></td>
</tr>
</tbody>
</table>

*Experiment 14: Chemical Kinetics takes 2 weeks. The Exp. 14 lab report counts for 120 points and performance points can be earned each week, so these are multiplied by 8. However, the pre-lab is only done for the first week, therefore the pre-lab points are multiplied by 7.

• Your TA is responsible for the majority of your numerical course grade; however, TAs will not assign letter grades.
• The Instructor for the lab course (Dr. Hench) will determine and assign final letter grades based on the following factors: your standing within your lab section, the strength of your final exam score, and the mean of your section compared to the course mean for all students enrolled in 102L during the spring 2015 semester. There are 42 sections of 102L in spring 2015.
• Lab section averages typically range from as low as 70 to as high as 90

SEMESTER SCHEDULE AND ASSIGNMENT DUE DATES
• The Pre-lab assignment for a given experiment must always be completed before lab participation in that experiment is allowed. See “Late Arrivals and Late Assignments”.
• Copies of lab notebook pages for a given experiment must be turned in at the end of each lab period to the TA.
• The experiment reports are due on Sakai on the same day as lab meets. The exact time depends on the lab session.
  o Experiment reports for all afternoon labs are due at 12:15 pm
  o Experiment reports for all evening labs are due at 5:15 pm

<table>
<thead>
<tr>
<th>Week of:</th>
<th>102L Experiment</th>
<th>Reports due during week of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/12</td>
<td>Lab Orientation and Check-In*</td>
<td></td>
</tr>
<tr>
<td>1/19</td>
<td>No Labs all week for Martin Luther King Jr. Holiday on 1/19/15</td>
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</tr>
<tr>
<td>1/26</td>
<td>Experiment 11: Experimenting with Gas Laws</td>
<td>2/2</td>
</tr>
<tr>
<td>Date</td>
<td>Experiment/Assignment</td>
<td>Due Date</td>
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<tr>
<td>2/2</td>
<td>Experiment 12: Vaporization and Intermolecular Forces</td>
<td>2/9</td>
</tr>
<tr>
<td>2/9</td>
<td>Experiment 13: Colligative Properties</td>
<td>2/16</td>
</tr>
<tr>
<td>2/16</td>
<td>Experiment 14: Chemical Kinetics - part 1</td>
<td>Report for Parts 1 &amp; 2 is due during the week of 3/2</td>
</tr>
<tr>
<td>2/23</td>
<td>Experiment 14 (cont’d): Chemical Kinetics - part 2</td>
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<tr>
<td>3/2</td>
<td>Experiment 15: Determination of an Equilibrium Constant</td>
<td>3/16</td>
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<tr>
<td>3/9</td>
<td>No Labs all week for Spring Break</td>
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<tr>
<td>3/16</td>
<td>Experiment 16: Standardization of Sodium Hydroxide Solution</td>
<td>3/23</td>
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<tr>
<td>3/23</td>
<td>Experiment 17: Identification of an Unknown Acid</td>
<td>3/30</td>
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<tr>
<td>3/30</td>
<td>Lab Check-Out and Review for Final Exam**</td>
<td>4/2 is the firm deadline for Equipment Check-Out**</td>
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<tr>
<td>4/6</td>
<td>Final Exams*</td>
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*Attendance during Orientation and the Final Exam is MANDATORY

**All students who fail to check-out by April 2nd, 2015 will be charged $100, the improper check-out fee in accordance with the Equipment Check-In agreement they sign during lab check-in.

**Late Arrivals and Late Assignments:** Being prompt with both arrival to lab and submission of lab assignments is a criterion that you are graded on in General Chemistry Labs. A grace period is allowed for both tardiness to lab and late submissions. During these grace periods, points are deducted, but you won’t be excluded completely. However, if your lateness exceeds the allowable time windows, you will lose all points available. For the specific policies and point deductions, see “Late Arrivals and Late Assignments” in the Course Policy Information folder under Resources on Sakai.

**Final Exam:** A comprehensive examination will be given on the last day of lab, after you have checked out. The exam is worth 200 points. The lab exam will cover material included in the lab manual, equipment and procedures used in experiments, and data analysis methods integral to the course. Exam questions will be presented in a mix of different formats including multiple choice, matching, and fill in the blank.

**Drop Policy:** If a student drops the lab course, they are responsible for scheduling a time with the Instructor (not the TA) to come in and check-out the equipment that they took responsibility for during lab check-in. Anyone who fails to check-out their lab drawer will be charged $100, as is indicated in the Equipment Check-In Procedure form.