CHEMISTRY 102L COURSE SYLLABUS: SPRING 2016
Quantitative Chemistry Laboratory II

LAB INSTRUCTOR AND SUPERVISOR: Dr. Lori Del Negro
EMAIL: lori.delnegro@unc.edu
(Please include your Name, Course, and Section number, as well as a clear subject, on all correspondence.)
OFFICE: Morehead Labs Room 106
INSTRUCTOR’S OFFICE HOURS: W 3:30 – 4:30 PM; F 11:00 AM – NOON;
Appointments can be requested via email

LAB CLASS MEETING TIMES:
- Monday and Wednesday labs: 1:25 pm – 5:15 pm
- Tuesday and Thursday afternoon labs: 1:00 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 laboratory sequence. CHEM101L covers gases, intermolecular forces, colligative properties of solutions, reaction rates, chemical equilibria, and acid-base titrations. The laboratory offers an opportunity to investigate chemical concepts in an applied setting, and learn how to make qualitative and quantitative observations of chemical properties and species. This course complements material taught in the CHEM 102 lecture course, and provides a foundation for more advanced work in chemistry and many other natural sciences.

PREREQUISITES: CHEM101 and CHEM 101L. A "C-" or better in CHEM 101L is required. NOTE: Enrolling in a course for which you do not have the proper prerequisites is considered an Honor Code violation.

COURSE WEBSITE: The course syllabus, software, announcements, grades, and other important lab information will be available on Sakai (https://sakai.unc.edu).
- You must have access to Sakai to submit assignments, take quizzes, and receive TA feedback and important messages related to the course.
- If you cannot login to Sakai, please email Dr. Del Negro as soon as possible (lori.delnegro@unc.edu).

ATTENDANCE DURING LAB CHECK-IN WEEK (JANUARY 11TH-14TH) IS MANDATORY
- Lab check-in for CHEM102L will begin in Murray Hall Room G202 during the regular meeting time for your lab section during the week of January 11th.
- Read the check-in information posted on the Sakai website, wear appropriate attire for the laboratory, and bring the required coursepack and equipment (see 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 2016 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 (continues on next page):
- **Spring 2016 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 other than the one specified here will be treated as an Honor Code violation.
- **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 (AXΣ) chemistry fraternity will be selling lab notebooks outside Murray G202 right before and during the lab check-in lectures for $12.00 (cash or check).
- **Lab goggles** (NOT safety glasses). If this is your first chemistry lab at UNC, you will receive a free pair on the day of lab check-in. Otherwise, you should bring your goggles with you to lab. If you forget your goggles, you will have to purchase a new pair before completing check-in.

- **Lab Coat.**
  - **NOTE:** Lab coats must stay in the lab room and may not be taken with you once you finish the lab.
- **Laptop computer** with the required software (see Laptop Policy on Sakai).

**Strongly Recommended:** Flash drive.

**Recommended:** Calculator.

**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 (see installation instructions on Sakai.)

**TA OFFICE HOURS:** You can attend office hours anytime when they are held by 102L TAs, according to the schedule posted on Sakai. TA Office Hours are held in Morehead Labs Room 408A at various times between 9:00 am and 5:00 pm, Monday through Friday. TAs will also hold Virtual Office Hours through the Forum feature on Sakai on a rotating basis.

- Do not wait until the night before or the day of your lab to contact a TA for help.
- You are encouraged to seek assistance, but please be respectful of all TAs’ time.
- Virtual Office Hours are not “24/7 instantaneous office hours.” Many questions are easier to address in person, and TAs may take longer to respond with an answer in the virtual forum.

**ATTENDANCE:** Attendance at every lab is of the utmost importance. Therefore, only extenuating circumstances will warrant an excused lab absence. To obtain an excused absence, students must submit a request following the specific instructions outlined in the Absence Policy found on Sakai under Resources in the Course Policies folder. No make-up labs are offered for excused absences in CHEM102L. Instead, absences are handled as outlined in detail in the Absence Policy found on Sakai and described briefly below:

- Any unexcused absence will result in a 0 for all possible points associated with a given experiment (0 out of 125 total points/experiment).
- For a first excused absence, the student must turn in the pre-lab assignment on time or by 4:00 pm on the date of returning to classes. The student will then receive mock data from the instructor and a full report write-up will be due to the TA one week from that date. The student’s course average will be calculated from 25 fewer points (corresponding to the in-lab performance evaluation and quiz points that cannot be earned.)
- For a second excused absence, the student must turn in the pre-lab on time or by 4:00 pm on the date of returning to classes. No additional assignment will be offered, but the student’s course average will be calculated from 125 fewer points (15 performance points + 10 quiz points for each of two missed labs + 75 lab report points from the second missed lab.)
- Three (3) or more absences (including excused absences) will result in a FAILING GRADE for Chemistry 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 points</td>
</tr>
<tr>
<td>Weekly Quizzes</td>
<td>80 points</td>
</tr>
<tr>
<td>Pre-Lab</td>
<td>175 points</td>
</tr>
<tr>
<td>Performance</td>
<td>120 points</td>
</tr>
<tr>
<td>Lab Report</td>
<td>525 points</td>
</tr>
<tr>
<td>Lab Final</td>
<td>200 points</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>1160 points</strong></td>
</tr>
</tbody>
</table>
Experiment 14: Chemical Kinetics takes 2 weeks. Experiment 14 has two separate quizzes and in-lab evaluations, at 10 and 15 points each. However, the pre-lab assignment is only done the first week, and the lab report is only completed after the second week, therefore the pre-lab and report points are multiplied by 7.

- Your section TA will provide grading and feedback on your written pre-labs and in-lab performance during the semester.
- Lab reports will be graded and feedback provided on a rotating basis by all TAs in your lab time slot. The schedule of which TAs are grading each section each week can be found on Sakai in the Resources tab under Course Policies. The expectation for all written work in the General Chemistry laboratory is to achieve a professional voice with skilled use of evidence in supporting conclusions. To this end, you will have feedback from many TAs, which will help you to gain a broader perspective in developing your skills in communicating science clearly and concisely.
- The Instructor for the lab course (Dr. Del Negro) will determine and assign final letter grades. Your numerical course average is the most important factor in this determination; the following factors may also play a role: 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 Fall 2015 semester. There are 18 sections of 102L in Fall 2015.

**SEMESTER SCHEDULE AND ASSIGNMENT DUE DATES**

<table>
<thead>
<tr>
<th>WEEK OF: 102L EXPERIMENT</th>
<th>REPORTS DUE DURING WEEK OF:</th>
<th>BEGUN IN LECTURE ON:</th>
<th>COMPLETED IN LECTURE ON:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/11 Lab Orientation and Check-in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/18 No labs all week for MLK Holiday 1/18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/25 Experiment 12: Intermolecular Forces</td>
<td>2/1</td>
<td>1/13</td>
<td>1/13</td>
</tr>
<tr>
<td>2/1 Experiment 14.1: Beer's Law of Crystal Violet</td>
<td></td>
<td>1/15</td>
<td>1/22</td>
</tr>
<tr>
<td>2/8 Experiment 14.2: Kinetics of Crystal Violet</td>
<td>2/15</td>
<td>1/15</td>
<td>1/22</td>
</tr>
<tr>
<td>2/15 Experiment 15: Equilibrium</td>
<td>2/22</td>
<td>1/29</td>
<td>2/3</td>
</tr>
<tr>
<td>2/22 Experiment 16.1: Standardization NaOH</td>
<td>2/29</td>
<td>2/17</td>
<td>2/24</td>
</tr>
<tr>
<td>2/29 Experiment 16.2: Titration Unknown Acids</td>
<td>3/7</td>
<td>2/17</td>
<td>2/24</td>
</tr>
<tr>
<td>3/7 Experiment 11: Gas Laws</td>
<td>3/21</td>
<td>3/7</td>
<td>3/11</td>
</tr>
<tr>
<td>3/14 No labs all week for Mid-semester Break</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/28 Lab Check-out and Review for Final Exam***</td>
<td>4/1 is the firm deadline for Lab Check-out**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/4 Final Exams*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Attendance during Orientation, Check-out, and Final Exam is MANDATORY
** All students who fail to check out by April 1, 2016 will be charged $100, the improper check-out fee, in accordance with Equipment Check-in agreement signed during check-in.

- The Pre-lab assignment for a given experiment must always be completed and reviewed by the TA before participation in that experiment is allowed. Normally, your TA will inspect this assignment for completion during the quiz, and will review it for a grade based on the duplicate pages turned in at the end of lab. See “Late Arrivals and Late Assignments” on Sakai.

- The weekly lab quiz will open on Sakai 5 minutes after lab is scheduled to begin. You will have up to ten minutes to complete the quiz. The TA may end the quiz early if everyone has finished. You must be present in lab to take the quiz, and you must be wearing full PPE with all lab materials correctly stored before beginning the quiz. Taking the quiz when you are not present in lab will be treated as an Honor Code violation - unauthorized access to lab materials.
Copies of lab notebook pages for a given experiment, including the pre-lab, must be turned in to the TA, before leaving the lab each day.

The Excel raw data file for the experiment must be submitted to Sakai, shared with any lab partner(s), and backed up in another location before leaving the lab each day.

The experiment reports are due on Sakai 1 hour before your scheduled lab section begins. The exact time depends on the lab session.

- Experiment reports for M,W afternoon labs are due at 12:25 pm
- Experiment reports for T,Th afternoon labs are due at 12:00 pm
- Experiment reports for all evening labs are due at 4:30 pm

**Late Arrivals and Late Assignments:**

To achieve full credit in lab and on assignments, you must arrive and submit assignments on time. More importantly, late arrival to lab or lack of preparation could pose a safety risk to others in your lab section. Therefore, the following guidelines apply to your work in the General Chemistry lab:

- All students must arrive to lab on time, properly attired for lab, and prepared for lab with a completed pre-lab assignment.
- Any student not meeting these criteria may take advantage of a 30-minute grace period to meet the requirements, though points will be deducted from performance and/or pre-lab scores for the day.
  - A student may use the time to find appropriate attire, or to complete the pre-lab assignment.
  - The pre-lab MUST be completed and reviewed by the TA before you start the lab experiment.
  - More points will be deducted for repeated incidents or extreme lateness, up to and including full credit.
- The weekly lab quiz can only be taken during the allotted ten minutes at the start of lab. Students must be wearing full PPE and have all non-lab materials properly stored before beginning the quiz. Late arrival to lab after the quiz has closed will result in a score of 0 on the lab quiz. Taking the quiz when you are not present in lab will be treated as an Honor Code violation - unauthorized access to lab materials.
- **No one may enter the lab after the 30-minute time window has passed, for any reason.** If you are prohibited from attending lab after the 30-minute grace period has ended, you will receive a 0 for performance points for the lab and a 0 for the lab report. The pre-lab assignment may be accepted after the 30-min grace period, though points will be deducted.
- Duplicate pages from your lab notebook showing sample calculations and observations noted while running experiments are due at the end of each lab period, before you leave for the day. Your TA will evaluate these to assign grades for the pre-lab and written portion of the in-lab assignment. No credit will be given for pages turned in after leaving the lab.
- Excel raw data files must be uploaded on Sakai at the end of each lab period, before you leave for the day, which means they must also be shared with lab partners before leaving. These data files should also be backed up in at least one secondary location, and that location included in the metadata of the Excel file. No data curation credit will be given for raw data turned in late, or lost due to poor habits.
- Lab Reports can be uploaded to Sakai up to 48 hours after the initial due date and time, with the following penalties:
  - Reports that are 0-12 hours late will have 10 points automatically deducted after the TA has assigned a score for the assignment.
  - Reports that are 12-36 hours late will have 25 points automatically deducted.
  - Reports that are 36-48 hours late will have 40 points automatically deducted.

The submission portal will close at 48 hours past the initial deadline and a score of 0 points will be entered. **It is the Student’s responsibility to verify that their Lab Report was properly uploaded to Sakai prior to the scheduled deadline.** Leave extra time when submitting your first few reports so that any difficulties can be resolved prior to the deadline.
**HONOR CODE:**

By signing the “Chemistry Lab Contract” (page 6-7 in the Student Packet), you acknowledge 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 examinations, research proposals, laboratory results, and laboratory 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/).

Established by the Undergraduate Labs Committee

April 2014

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 should see your TA for help. Collaboration on lab reports is a violation of the University Honor Code and will be treated as such.

Misunderstandings of academic integrity can arise when citing 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, a website) 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.

For more guidance on correct citations and advice on avoiding plagiarism or improper paraphrasing, please see the following resources (also available via the Sakai course website):

- **Library Resource page**
  - the Library Plagiarism Tutorial ([http://www2.lib.unc.edu/instruct/plagiarism/](http://www2.lib.unc.edu/instruct/plagiarism/)),
  - Writing Center Citation Guide ([http://www2.lib.unc.edu/instruct/citations/index.html?section=introduction](http://www2.lib.unc.edu/instruct/citations/index.html?section=introduction))
  - (CSE/CBE, Name/Year format) ([http://www2.lib.unc.edu/instruct/citations/index.html?section=name&page=1](http://www2.lib.unc.edu/instruct/citations/index.html?section=name&page=1))
  - Citation of online sources ([http://www2.lib.unc.edu/instruct/citations/index.html?section=name&page=4](http://www2.lib.unc.edu/instruct/citations/index.html?section=name&page=4)).

- **Writing Center page**
  - Plagiarism Handout ([http://writingcenter.unc.edu/handouts/plagiarism/](http://writingcenter.unc.edu/handouts/plagiarism/))
  - How We Cite Handout ([http://writingcenter.unc.edu/handouts/how-we-cite/](http://writingcenter.unc.edu/handouts/how-we-cite/))

In CHEM 102L, we will not spend class time specifically covering correct citation of external resources used in writing lab reports. It is the student's responsibility to use the resources listed above, and to ask for assistance from librarians, writing center tutors, and your TAs, so that you avoid any real or perceived academic dishonesty.

**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. Collaboration is not permitted for ANY calculations, no matter how simple.

In the event that exceptions to this guideline are allowed, you will receive instructions detailing where in a particular experimental protocol graphs and 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 as your own, this is plagiarism. You can present facts from and outside source, as long as you properly reference the source.
- Allowing another student to use your work as their own. Do not allow your partner or other students to have access to your lab reports (the completed template Word document.) You may share data if you collected the data together, but everything else (calculations, graphs, tables, interpretation) must be done alone.
- Unauthorized access to lab materials. Any use of lab reports or lab manuals from previous semesters constitutes a violation of the Honor Code. Taking a lab quiz when you are not present in lab is another such case. Other specific cases are noted in the course policies 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 multiple choice format, and will focus on the skills and analysis developed in the laboratory.

LAB CHECKOUT POLICY: Lab checkout is required of every student before noon of the Friday of checkout week. Failure to do so will result in a $100 fee for Improper Checkout billed to your student account. Lab checkout is held at the beginning of the lab period during the week before the final lab exam.

- If you withdraw from the course early: Within two weeks of dropping or withdrawing from the course, and before noon of the Friday of checkout week, you should come to Morehead 106 any day between 10 am and noon. During those times a member of the prep staff can assist you in checking out of your lab drawer. Lab checkout is not permitted on Monday-Thursday afternoons because labs are in session. In special circumstances a limited number of checkouts on Friday afternoon may be possible, but these need to be arranged in advance.
- Attendance during checkout week. Students who have completed the course may not check out at times other than when their lab section is scheduled to do so. Please don't plan any other activity during the week of checkout.

Anyone who has not checked out by noon on the Friday of checkout week (4/1/2016) will be assessed the $100 fee for improper checkout.