Chemistry 1025-L: Introductory Chemistry laboratory

Ybor Campus. Summer 2016  Section 83432

Instructor: Dr. Bert Rubini  http://content.hccfl.edu/faculty/bertrubini/home.htm
Office: YFAC 206  Telephone: 259-6089  e-mail: rrubini@hccfl.edu

Meeting Time: Mondays and Wednesdays, 8:00 to 10:10 AM, Room YBOR 202

Textbook: Foundations of Chemistry in the Laboratory Hein, Peisen & Miner, 14th Ed.

Grading:  
Quiz Average  5%
Attendance  5%
Final Exam  15%
Average on Experiments  75%
100%

Your grade in the class is primarily determined by your average on the lab reports; most of your lab report will consist of pages torn out of your lab manual, but you should bring notebook paper to class for quizzes.

Attendance is worth up to 5 points per day. If you arrive by 8:10 AM, you will receive 5 points for the day. Students arriving between 8:10 and 8:20 AM will receive 2 points out of 5. Students arriving after 8:20 AM will receive a zero for attendance that day. If you have not arrived at lab by 8:30 AM, you are considered to have missed the lab and will receive a zero on that experiment.

The grading on the lab reports is as objective as possible. On those experiments with unknown determination, heavy emphasis will be placed on correctly identifying the unknown. A grading scale will be supplied when each lab is returned. Those who are not present when the quiz is passed out have missed the quiz. You will not be allowed to take the quiz if you are late for lab.

Grading Scale:  
90-100%  A  
80-89%  B  
70-79%  C  
60-69%  D  
< 60%  F

Dr. Rubini’s Office Hours for Summer 2016: by appointment.

Important Notes:
1. Please note that this lab course is a co-requisite with the lecture; if you drop the lecture, you will ALSO BE DROPPED FROM LAB! I do not override course co-requisites.
2. Any student who does not sign in during the first meeting of the lab will be considered a non-attendee and will automatically be dropped from the course. It is NOT POSSIBLE to re-register for the course if you are dropped for non-attendance. It is YOUR RESPONSIBILITY to sign in to the course to preserve your spot.
Below is a schedule of experiments for the lab; please note that we do meet twice every week! If there is not an experiment scheduled for a particular day, you do NOT have to come to lab that day!

<table>
<thead>
<tr>
<th>Date</th>
<th>Experiment</th>
<th>Report Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/23 (Mon)</td>
<td>Intro / Lab Safety</td>
<td>none</td>
</tr>
<tr>
<td>5/25 (Wed)</td>
<td>Expt. #2: Measurements – <strong>Section A, B, D and E only</strong></td>
<td>none</td>
</tr>
<tr>
<td>6/1 (Wed)</td>
<td>Expt. #1: Lab Techniques – <strong>Section A, C and D only</strong></td>
<td>none</td>
</tr>
<tr>
<td>6/8 (Wed)</td>
<td>Expt. #6: Freezing Points and Graphing of Data</td>
<td>#2 and #1</td>
</tr>
<tr>
<td>6/15 (Wed)</td>
<td>Expt. #7: Water in Hydrates</td>
<td>#6</td>
</tr>
<tr>
<td>6/20 (Mon)</td>
<td>Expt. #5: Calorimetry and Specific Heat</td>
<td>none</td>
</tr>
<tr>
<td>6/22 (Wed)</td>
<td>Expt. #3: Preparation and Properties of O₂</td>
<td>#7</td>
</tr>
<tr>
<td>6/27 (Mon)</td>
<td>Expt. #11: Double Displacement Reactions</td>
<td>#5</td>
</tr>
<tr>
<td>6/29 (Wed)</td>
<td>Expt. #10: Composition of Potassium Chlorate</td>
<td>#3</td>
</tr>
<tr>
<td>7/6 (Wed)</td>
<td>Expt. #22: Neutralization: Titration I</td>
<td>#11 and #10</td>
</tr>
<tr>
<td>7/13 (Wed)</td>
<td>To Be Announced</td>
<td></td>
</tr>
<tr>
<td>7/18 (Mon)</td>
<td><strong>Final Exam</strong> <em>(Coverage to be announced)</em></td>
<td>#22</td>
</tr>
</tbody>
</table>

Below are the course objectives for CHM 1025-L, as approved by Hillsborough Community College:

At the end of this course, the student will be able …

1. To understand the safety rules in the chemistry laboratory; to properly and safely handle chemicals and chemical equipment

2. To identify and use common equipment and measuring devices in the chemistry laboratory; to report experimental data with precision appropriate to the measuring devices used.

3. The student will perform experiments which enhance their understanding of . . . .
   a. General techniques in the laboratory, including measurement of mass, volume, temperature; proper use of bunsen burner; filtration; and quantitative transfer of materials.
   b. Proper recording of experimental data.
   c. Tabulation and graphing of experimental data, and calculation based upon collected data.
   d. Stoichiometry
   e. Density
   f. Energy Changes in Chemical Reactions
   g. Acid / Base Reactions
   h. Solution Properties and Molar Relationships
   i. Qualitative Analysis
"Neither can his mind be thought to be in tune, whose words do jarre, nor his reason in frame, whose sentence is preposterous."

-- Ben Johnson, 1641

Your lab reports are a very significant part of your grade in this course - 75% of your grade. So it is important to write all your lab reports in a manner consistent with the format described below.

BEFORE COMING TO LAB:

Refer to the class schedule to ensure that you are preparing for the correct experiment. We do not perform the experiments in the order that they appear in the lab manual! Thoroughly read the experimental discussion and procedure.

DURING THE LAB CLASS:

1. Be prepared for a brief (-10 minute) quiz on the experiment to be performed. The quiz (if there is one) will be given PROMPTLY at the starting time for the lab. Please remember that if you are late for lab FOR ANY REASON, you will not be permitted to take the quiz. This includes transportation problems, your alarm not going off, getting stuck in traffic, as well as any other reason you can think of. You must be present WHEN THE QUIZ IS PASSED OUT or you get a zero. Even if you are only 30 seconds late.

2. Your instructor will provide a pre-lab discussion which includes any changes or modifications in the lab procedure, special safety instructions, and tips which may make your experiment run more smoothly.

3. Make certain you have proper lab attire! Short pants or short skirts ARE NOT PERMITTED IN LAB! If you show up with improper lab attire, you will be given an unexcused absence from the lab. You will be penalized one point from your experiment for each time the instructor reminds you to wear your goggles.

4. Generally, we do NOT work in groups or pairs. Everyone should do their own experiment unless otherwise indicated by your instructor.

   Begin the experiment, recording all data IN INK in your LAB MANUAL on the report sheet. Hand-written data pages are not acceptable under any circumstances. Do not use pencil. If you make a mistake, draw a line through the erroneous data and write in the correction above it.

   Do not write data on a separate sheet of paper. Scrap paper is not acceptable for the recording of measurements or data, and will be confiscated if used. REMEMBER TO RECORD THE UNITS OF ALL MEASUREMENTS. REMEMBER TO RECORD YOUR UNKNOWN NUMBER (if appropriate).

   (continued)
AFTER THE EXPERIMENT IS COMPLETED:

1. Perform any calculations required to complete the report sheet. All calculations must be on a separate sheet and should be shown clearly and legibly, including the numerical set-up. Be careful of significant digits.
   Also answer the "questions and problems" section of the report, if there is one.

2. The due dates for lab reports are given on the lab schedule above; the lab report is due at the beginning of the lab period on that date. You should submit your completed lab report, including DATA SHEET, CALCULATIONS PAGE and QUESTIONS & PROBLEMS. Submit the data page taken directly from your lab manual; hand-written data pages are not acceptable under any circumstances. The assignment is considered late if it is not finished at the beginning of the period.

Policy for Late Papers:

- Lab reports will have 10 points deducted if turned in late during the lab period (or later during the day they are due), plus an additional 10 points per calendar day, including weekends. This deduction applies for a paper which is late FOR ANY REASON, including leaving it in your car, getting stuck in traffic, leaving it at home, dog eating it, etc.
- You will always have at least 5 days to complete a lab report; (if you perform an experiment on Monday, it will NOT be due Wednesday of the same week. Labs are never due the same week that they are performed). Experiments which are performed on MONDAY are due on the first meeting of the NEXT WEEK; experiments which are performed on WEDNESDAY are also due on the first meeting of the NEXT WEEK.