CHM 157 Laboratory
Fall 2008

Instructor: Hari Prasad, Ph.D.  
Office: 349 HHS  
Phone: (248)-370-2091  
Office Hours: TTH 12:00 – 1:00 p.m. or by appointment  
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Teaching Assistants: Abhijit Ghosh and Daniel Breznau

Course: CHM 157/147 lab (part of a 5 credit course)  
CRN: 40558/ 41138  
Section: 007 / 003  
Room: 230/240 HHS  
Day: Tuesday  
Time: 5:30 – 8:30 p.m.

Required Items:
* Students are required to print the Experimental Data/Observation Sheets and Post Laboratory/Summary Sections for each experiment. The experiments used in CHM 157/147 laboratory are available to you on the Moodle website associated with this class. (https://moodle.oakland.edu)
* Safety Goggles (not safety glasses). These are available for purchase from the bookstore.

You are responsible for printing your own data sheets weekly and for supplying your own SAFETY GOGGLES. You will need to bring both the printed data sheets and safety goggles with you to every class.

Experiment Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Expt #</th>
<th>Experiment</th>
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</thead>
<tbody>
<tr>
<td>9/9</td>
<td></td>
<td>Laboratory Safety &amp; Check-In</td>
</tr>
<tr>
<td>9/16</td>
<td>1</td>
<td>Chemical Reactivity Part I &amp; II</td>
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<tr>
<td>9/23</td>
<td></td>
<td>Part III</td>
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<tr>
<td>9/30</td>
<td>2</td>
<td>Copper Cycle</td>
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<tr>
<td>10/7</td>
<td></td>
<td></td>
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<tr>
<td>10/14</td>
<td>3</td>
<td>Conductivity of Solutions</td>
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<tr>
<td>10/21</td>
<td>4</td>
<td>Acid-Base Titrations</td>
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<tr>
<td>10/28</td>
<td>5</td>
<td>How Much is Too Much? Part A &amp; B</td>
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<tr>
<td>11/4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/11</td>
<td>6</td>
<td>Analysis of Copper in Brass</td>
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<tr>
<td>11/18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/2</td>
<td>7/8</td>
<td>Molecular Structure /Synthesis of Aspirin/Check-out</td>
</tr>
</tbody>
</table>

Last day for Official Withdrawal is November 4, 2008. If you drop this course, please come in and check out of the lab drawer. You will be charged a check-out fee ($10.00) and a key replacement fee ($15.00) if you don't check out of your drawer. The last day to check-out of your drawer is Tuesday December 2, 2008.

* If the lab is split into 2 rooms, then students in 230 HHS will do Expt. 7 and the students in room 240 HHS will do Expt. 8 the first week. The following week the rooms will switch assignments.
Catalog description:
Integrated lecture-laboratory. States of matter, atomic structure, bonding and molecular structure, chemical reactions. Recommended preparation is three years of high school mathematics and one year of high school chemistry. CHM 157 satisfies the university general education requirement in the natural science and technology knowledge exploration area.

Prerequisite: Score of 20 or higher on ACT mathematics exam; or MTH 012; or CHM 104.

Purpose:
The laboratory combined with the lecture is designed to reiterate the chemistry concepts learned in the classroom through hands-on experience. The laboratory portion of this class will familiarize one with basic laboratory techniques. In many instances the experiments demonstrate how these basic chemistry concepts relate to everyday life.

Absence Policy
Students who are absent or planning on missing a lab should notify their lab instructor immediately. Make-up laboratory experiments will only be granted for students who have experienced extreme circumstances and notified the instructor within 12 hours of the missed lab. The instructor is the sole judge of the circumstances that qualify as a condition sufficient for a make-up. If the instructor is not notified within 12 hours of a missed lab, then the student will not be allowed to make-up the laboratory. Failure to attend labs places an extra burden on a student’s laboratory partner. Students that miss more than one lab period will be given a score of 0% for the laboratory portion of CHM 157.

Laboratory Reports & Grading:
Although you will be working with a partner, each student will submit their own lab report. Lab reports are due at the beginning of the lab period that follows the completion of an experiment. Late lab reports lose credit as follows: 1 day late = -10% of possible total points; each additional day late = -10% of possible points per day. Note: 5 minutes late and 24 hours late both count as “1 day late”). Lab report grades will be posted throughout the semester on the Moodle website. Students will be allowed to look at their graded reports in the laboratory, but they will not be allowed to take them from the laboratory. If the graded lab report is not returned to the instructor, they will receive a zero score for that lab.

Final grades will be based on the total points earned by the student. Each student will submit 8 lab reports (100 pt each) for a total of 800 points. The final percentage for the lab will be forwarded to the lecture instructor and be worth 20% of the overall CHM 157 grade. No lab report scores will be dropped, and no extra credit will be given.

Safety Requirements
All students are expected to abide by the safety requirements set forth by Oakland University. The code of safe conduct is in the Oakland University Undergraduate Chemical Laboratory Safety Manual. This document can be found on the Moodle website for this course. Each student is expected to read and understand the manual. Prior to starting in the first experiment, each student must complete and pass the quiz at the end of the Laboratory Safety Manual. Students that do not pass the safety quiz will not be allowed to participate in the lab. Any student not following the code of safe conduct will be removed from the lab and receive a zero grade in the lab.

Laboratory Waiver
Any student that has completed CHM 157 at Oakland University within the last three years and has a grade of 75% or better in the lab is eligible for a laboratory waiver. If you wish to apply for a laboratory waiver, a General Chemistry Laboratory Waiver Form must be filled out and submitted to your current lecture instructor within the first week of the current semester. This form is located in the Department of Chemistry office (260 SEB). If your application for the laboratory waiver is approved, you will use the laboratory grade earned in the previous semester.
You must attend the lab until the laboratory waiver has been approved. You must remain registered for the lab if the waiver is approved.

**Add/Drops**
It is the responsibility of the student to know the deadlines set forth by the University for add/drops. Any student that drops the lab is still required to check-out of the lab. Any student that does not check-out of the lab will be charged a $25 check-out fee.

**Special Considerations**
Students with disabilities who may require special considerations should make an appointment with campus Disability Support Services. Students should also bring their needs to the attention of the instructor as soon as possible.

**Closing of the University:**
In the event that the University closes on a day when class is held forcing the class to be cancelled, the scheduled events for the cancelled class day will be conducted on the next meeting.

**Academic Conduct:**
Students are expected to uphold the academic standards set by Oakland University. The work submitted by any student should be their own work. Students suspected of academic misconduct (Examples of academic misconduct are the submission of labs containing data that has been falsified, copying any part of your lab from a previously graded lab report, copying from other students, plagiarism, changing answers on your lab report after the report has been graded, the use of materials not authorized by the instructor, obtaining copies of old lab reports or answer keys, or another student completing the lab for you), will be reported to the academic conduct committee. Students found guilty of academic misconduct for the laboratory will receive a zero grade for the course. Note: this is not just for the laboratory portion of the course, but the 0.0 grade is for the entire 5 credit hours of CHM 157. For further details see Academic Conduct Policies section (p. 100 – 102) in the 2008 – 2009 Undergraduate Catalog.

**Laboratory Expectations:**
**Before Lab:**
1. **Pre-lab assignment:** This is due at the beginning of the lab period. The pre-lab is submitted with your lab report, so even if you have not covered the material in lecture, you are still responsible for making an attempt at ALL of the pre-lab problems before class. The questions are usually listed before the procedure section in the lab.

2. **Procedure:** The Experimental Procedure needs to be typed or written out. No photocopies or printouts of the original document will be accepted. This is also due at the beginning of the lab period. Please have the pre-lab and procedure out on the bench at the beginning of class to be initialed by your instructor or TA.

   You will not be allowed to work in the lab unless your Pre-lab and procedure are complete. If your Pre-lab assignment or procedure is not complete when you enter the lab, you will be asked to leave the lab to finish this assignment in the hallway. You are then only eligible for 50% of the pre-lab and/or procedure assignment points for that lab.

3. **Additional Reading:** Read any sections in the “Laboratory Skills” document that may pertain to the days experiment. This document is available on Moodle. (https://Moodle.oakland.edu)

4. **Data Sheets:** Print a copy of the data sheets for the days experiment. You will need these for class. If you do not have the data sheets with you, you will be required to go print out these pages before you can begin the lab.
During Lab:
1. You are expected to be on time for lab. Students who are late to lab will not be given additional time to complete the lab.

2. You should conduct yourself in a manner that would provide a safe working environment in the lab for all students. Students acting in such a manner that would jeopardize the safety of any student will be asked to leave the lab and will receive a zero for the day’s work.

3. You should work efficiently with your lab partner. All labs are designed to be completed within the 3 hour lab period. No additional lab time will be given. This sometimes requires that the work be divided between you and your lab partner.

4. At the end of the day, all data MUST be initialed by the instructor. Data sheets without initials will be given a zero.

5. Additional Lab notes:
   a. All data must be recorded in ink. No pencils or erasable ink pens allowed.
   b. If you make a data entry/recording error, the following procedure for correcting that error is as follows.
      1. Any errors made in the lab should be crossed out with a single line and then the corrected data written next to the error where there is space. DO NOT SCRIBBLE OUT ERRORS!
         e.g. 0.0476 g 0.476 g
      2. Any data recording errors must be initialed by the instructor or TA before you leave the lab. Lab report data sheets submitted with errors not initialed by the instructor will lose data points.
   c. Reminder: Decimal numbers should include a zero in front of the decimal.
   d. No shorts or open toe shoes.
   e. The use of cell phones in the lab is prohibited.

Lab Reports:
1. Lab reports are due at the beginning of your next lab period (Tuesday, 8:00 am)  
   Turn in completed lab report to your instructor.
2. Lab reports should include the following:
   Grading-sheet with your name and partner’s name, pre-lab questions, procedure, data and observations, any graphs or tables, and post-lab questions
3. Pages should be in numerical order or in the order of how it is listed on the coversheet.
4. The lab report must be stapled (five point deduction for turning in a report not stapled)
5. Your name should appear on all pages.
   Due to the large number of lab reports that are turned in, occasionally pages come loose during the process of submission and grading.