CHM 158 Laboratory
Winter 2013
Tentative Syllabus

Instructor: Audra Kimberly Buffenn
Office: 341 Hannah Hall
Phone: (248) 370-4659
Office Hours: M 11:00 a.m. – 12:00 p.m.
Or by appointment
E-mail address: buffenn@oakland.edu

Course: CHM 158 Laboratory
CRN: 11069
Room: 230/240 HHS
Day: Wednesday
Time: 2:30pm – 5:30pm

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 158 laboratory are available to you on the Moodle website associated with this class. (https://moodle.oakland.edu)
• Safety Goggles - Must be Z87 rated (no safety glasses allowed). These are available for purchase from the bookstore.
• Lab Coat – must have long sleeves and at least mid-thigh in length (38” from natural neckline). This is available at the bookstore.
• Safety Quiz and Video – you must watch the safety video and take the safety quiz before you can participate in the lab. These are available on the Moodle website associated with this class. (https://moodle.oakland.edu)

General Course Overview:
CHM 158 is a lecture-laboratory course that represents the second half of a two-semester course in general chemistry. This syllabus covers the laboratory portion of the class. CHM 158 focuses on the factors that influence the rates and equilibrium of chemical reactions. A student’s performance in this class contributes 20% to his or her final score in CHM 158.

Experiment Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Experiment</th>
<th>Post Lab Quiz</th>
<th>Report Due Date</th>
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</thead>
<tbody>
<tr>
<td>1/9</td>
<td>No Lab</td>
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<td></td>
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<tr>
<td>1/16</td>
<td>Check-In and Safety Lecture, (Mandatory Attendance)</td>
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<tr>
<td>1/23</td>
<td>Exp 1</td>
<td>Quiz Exp 1</td>
<td>Exp 1</td>
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<tr>
<td>1/30</td>
<td>Exp 2 Part I</td>
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<tr>
<td>2/6</td>
<td>Exp 2 Part II</td>
<td></td>
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<tr>
<td>2/13</td>
<td>Exp 3 Part I</td>
<td></td>
<td>Exp 2</td>
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<tr>
<td>2/20</td>
<td>Spring Break</td>
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<tr>
<td>2/27</td>
<td>Exp 3 Part II</td>
<td></td>
<td></td>
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<tr>
<td>3/6</td>
<td>Exp 4 Part I</td>
<td>Quiz Exp 3</td>
<td>Exp 3</td>
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<tr>
<td>3/13</td>
<td>Exp 4 Part II (lab practical)</td>
<td></td>
<td>Exp 4</td>
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<tr>
<td>3/20</td>
<td>Exp 5 (room 230)</td>
<td>Quiz Exp 7</td>
<td>Exp 5 or 6</td>
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<tr>
<td>3/27</td>
<td>Exp 6 (room 230)</td>
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<td>Exp 5 (room 240)</td>
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<tr>
<td>4/3</td>
<td>Exp 7 and Check out</td>
<td>Quiz Exp 7</td>
<td>Exp 5 or 6</td>
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<tr>
<td>4/10</td>
<td></td>
<td>Quiz Exp 7</td>
<td>Exp 7</td>
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**Last day for Official Withdrawal is March 29, 2013.** If you drop this course, you still need to check out of the lab. Failure to check out of your lab drawer will result in a laboratory check out charge ($25.00). The last day to check out of your drawer is April 3, 2013.

**Purpose**
The laboratory combined with the lecture is designed to reiterate the chemistry concepts learned in the classroom through hand-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.

**Add/Drops:** The University add/drop policy will be explicitly followed. It is the student’s responsibility to be aware of the University deadline dates for dropping the course. If you drop the class you must still check-out. **If you drop without checking-out you will be fined $25.**

**Laboratory Groups and Grading:** The experiments will be performed in groups of three to four students. The lab groups will be assigned on the first day of class. Every student is expected to make an equal contribution to the execution of the laboratory experiments and to the production of the reports. The instructor should be informed of any “free-loading” group members. Students will have an opportunity to rate the performance of their team members. The average rating received by each student will partially determine the grade received by the student. Each group will turn in a total of seven laboratory reports. Each group will be given one grade for each report. The grades will then be individually adjusted for each laboratory group member based on the peer-evaluation scores. You will rate the contribution of each member of your team on each experiment in terms of a percentage score on a team assessment form. Lab reports are due at the beginning of the lab period that follows the completion of an experiment. Late reports lose credit as follows: 1 day late = -10% of possible total points; each additional day late = -10% of possible points. Note: 5 minutes late and 24 hours late both count as “1 day late”).

If anyone disagrees with any part of the group report, he/she may submit an addendum to the report whose grade will replace that for the part in question of the group report. Addenda should be stapled at the back of the group report. For experiments with individual unknowns, the data sheets for the unknowns should be stapled at the back of the group report. Be sure these data sheets show your name and unknown number.

**Extra Credit or Dropped Scores:** There is no extra credit or dropped scores

**Lab Practical**
For experiment 4, part II will be a lab practical. The lab practical is done individually and all calculations and graphs must be done in class. The lab practical must be turned in before leaving the lab that period. Lab practical will be worth 60 points.

**Make-up Laboratories**
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 group members. Groups should report students that miss more than one laboratory session. **If you miss more than one lab period you will be given a score of 0% for the laboratory portion of CHM 158.**
Laboratory Waiver
If you are repeating this course, you may be able to waive the laboratory portion of the current course. You may choose to use the laboratory scores from the first course if: (1) your average in the laboratory portion of that course was at least 75% and (2) you were enrolled in that course no more than three years ago. If you wish to apply for a laboratory waiver, you must complete a General Chemistry Laboratory Waiver form. These forms are available in the Department of Chemistry office, 260 Science and Engineering Building (SEB). This laboratory waiver form must be completed and returned to your current lecture instructor during the first week of the current semester. You must attend the laboratory portion of the course until the waiver is approved.

Post-Lab Quizzes
At the end of experiments 1, 3 and 7 a Post-Lab Quiz will be administered. These quizzes will be given on the dates listed in the syllabus. The Post-Lab quizzes will test your knowledge of the experiment, including safety, theory, and calculations. The quizzes are worth 5-10 pts of your lab report.

Academic Conduct
Students are expected to uphold the academic standards set by Oakland University. The work submitted by students 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 by the Academic Conduct Committee will receive a course grade of 0.0. Note: This grade is not just for the laboratory portion of the class but for the entire 5 credit hours of CHM 158.

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.
Additional Information Regarding CHM 158 Laboratory

Group Learning
Much of the course work that you do will be done as a member of a team. You will be assigned to a team during the first laboratory period. It is important that you understand some of the goals and benefits of group learning.

A survey (American Society for Training and Development and the U.S. Dept. of Labor, 1988) of major businesses and industrial firms, concluded that if students are to reach the workplace well equipped to cope with the “real world” they must have the opportunity to learn:

- how to learn
- how to listen and communicate orally
- adaptability based on creative thinking and problem solving
- group effectiveness characterized by interpersonal skills and teamwork
- organizational effectiveness and leadership

These skills are among the things that you should learn in Chemistry 158, in addition to becoming familiar with the process of experimentation and learning some chemistry. Research has shown that most students learn better, develop interpersonal skills and enjoy a course more when it is conducted in a group learning environment. This does not mean that students simply work side by side on a problem, or the best student works while the others watch. Rather, a group that is functioning well will exhibit interdependence. Everyone contributes something to the group. The more effort that you put into the group, the more you are likely to be rewarded in terms of skills learned and, ultimately, in terms of your grade.

When people work in groups, it is important that they be able to communicate with each other without conflict. Sometimes during the semester a group member may say or do something you disagree with or something that annoys another student. Please bear in mind that it is all right to be critical of ideas but it is not acceptable to be critical of the person expressing the idea. If you criticize the person it is almost certain to cause hard feelings and affect group functioning.

Try to avoid win/lose situations. The goal of this lab is to develop problem solving skills, not to engage in conflicts where one person’s ideas dominate. In the context of solving problems in the general chemistry lab, group members may feel temporarily perplexed and discouraged. It is important to know that being temporarily perplexed is a natural state of problem solving. If you know immediately how to solve a problem, then it is an exercise and not a problem.
WHAT YOU SHOULD DO

Before Lab.
You need to be prepared. At a minimum you should:

- Study the relevant sections of this lab procedure and basic skills document and any other assigned reading material. You need to think about what you will do at each stage of the experiment as you read it. Note any questions you have or points of uncertainty. You should discuss these with your group members and if questions still arise with the instructor or teaching assistant. These labs are designed for you to “discover” many things so don’t expect the instructor or teaching assistant to directly answer your question if they relate to something that you need to find experimentally.

- Listen carefully to any comments about future labs that the instructor or teaching assistant makes during laboratory discussion periods. Note you will not be told what to do for the experiments or what results you will find -- part of your job is to figure out these details.

- Complete the pre-laboratory assignment (in this lab manual). This must be turned in at the beginning of the laboratory period. This is how we know that you have prepared for the laboratory. If you do not complete your pre-lab before coming to lab, you will be asked to stay outside the lab until the pre-lab is completed and then you can only receive a maximum of 50% of the total pre-lab points. Note: the answers to the pre-lab will not be posted.

Students often find it helpful to work in groups when preparing for laboratory. Since how well you do depends, in part, on the data that your classmates collect, everyone benefits when their classmates are better prepared. If the objective of the lab or the background material is not clear, seek assistance before lab. Possible sources of assistance are your team members, other classmates, the instructor, and the teaching assistant. You may submit a single pre lab sheet for your group. This sheet should show the names of all group members and the group number. If anyone disagrees with the answers on the group sheet, he/she may submit an individual sheet.

During Lab.
Record all of your observations. Chemistry is an experimental science. If you don’t record your observations you aren’t doing chemistry. The lab experiments contain forms that you can use to record your data. Follow the correct laboratory procedures you learned in CHM 157 for recording data. (Use ink; don’t erase errors but strike out with a single line so old value is still legible and write corrected value next to it; be neat so all data is legible; use proper number of significant figures; show units, etc.) At the conclusion of each lab period, you need to have your TA initial the data forms that you have completed (all of the data forms have a line for TA initials). Your data form should not be changed once your TA has initialed it. These experimental data (together with other data measured by the rest of the class) will form the basis for your post-lab discussion and for your post-lab report. Each team member should record all data on his/her data sheets. However, only one set of data sheets will be submitted with the group report.
Team Assessments
Each student will submit a team assessment for every lab report. You will rate the contribution of each member of your team on the experiment in terms of a percentage score on a team assessment form. Each group member should be scored out of a possible 100%. For Experiment 1, the rating of teammate contributions will not affect the grades but will show each person how the others on the team value each person’s efforts. For experiments 2, 3, and 4, ratings will impact 25%, 50%, and 75%, respectively, of the lab scores. For experiments, 5 through 7, 100% of the lab scores for each person will be multiplied by the teammates’ average rating.

SAMPLE TEAM ASSESSMENT FORM

Note: This form needs to be filled out by each lab group member for each laboratory report handed in.

Team Number ____Group 1__________________ Lab Section ___________

Determine and record the percent contribution of each group member to the experiment.

Your Name: Percent Contribution:
__Joe Smith___________________________ ______100%___________

Other Team Names: Percent Contribution:
__Group Member 1______________________________ ______100%_______
__Group Member 2______________________________ ______100%_______
__Group Member 3______________________________ ______75%______

Describe your contributions to the completion of the experiment and the team report and discussion presentation.

For this experiment, I completed the pre-lab, part 1 and part 3 of the experiment and question 2 & 4 of the post-lab.