CHM 2046L Laboratory Syllabus
Summer 2014

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Course: CHM 2046L.C011 Chemistry Fundamental Laboratory 1 Unit
Meeting: Tuesday, 1:00-4:50 p.m. CHEM 108

Required Materials
1. Lab Coat (Full length)
2. Safety Glasses
3. Bound Notebook
4. Scientific Calculator

Course Description
This course provides students with the disciplinary knowledge, and basic laboratory skills necessary to succeed in the more advanced laboratories courses.
It will focus on traditional wet chemistry approach. Topics will include volumetric titration, spectrophotometry, calorimetry, chemical equilibria, and electrochemistry.
An introduction to writing within the science discipline will be addressed each week.

Course Prerequisites
Students must have completed or be presently enrolled in CHM2045 and CHM2046 Chemistry Fundamentals I & II (or equivalent). Although students are not expected to have prior chemistry laboratory experience, it is expected that students have mastered general chemistry topics discussed in prerequisite courses.

Objectives
By the end of this lab, you should be able to:
• Utilize common lab equipment, i.e. balance, buret, UV-Vis spectrophotometer, etc.
• Perform common lab practices, i.e. pipetting, titration, etc.
• Produce and maintain a lab notebook.
• Keep safety the first priority while working in the laboratory
• Design a procedure to answer a key question
• Model how writing is used in a variety of chemistry genres
• Develop stronger critical thinking skills
• Use laboratory terminology/vocabulary in text and oral communication

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- Analyze data through algebraic calculations and graphical analysis
- State a claim based on experimental evidence

**Evaluation and Grading**

The final grade for this course will be computed using the following data:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelab Assignments</td>
<td>100</td>
<td>10%</td>
</tr>
<tr>
<td>Lab Quizzes</td>
<td>150</td>
<td>15%</td>
</tr>
<tr>
<td>Post Labs &amp; SW</td>
<td>500</td>
<td>50%</td>
</tr>
<tr>
<td>Notebook</td>
<td>100</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>150</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1000</td>
<td>100%</td>
</tr>
</tbody>
</table>

The following grading scale will be adopted:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100 %</td>
</tr>
<tr>
<td>B+</td>
<td>85-89 %</td>
</tr>
<tr>
<td>B</td>
<td>80-84 %</td>
</tr>
<tr>
<td>C+</td>
<td>75-79 %</td>
</tr>
<tr>
<td>C</td>
<td>70-74 %</td>
</tr>
<tr>
<td>D</td>
<td>60-69 %</td>
</tr>
<tr>
<td>F</td>
<td>≤ 59 %</td>
</tr>
</tbody>
</table>

**Laboratory Notebook**

Each student should have a Laboratory Notebook to be used for recording laboratory work. Use the following conventions for keeping your laboratory notebook:

1. Use a bound notebook (e.g., a "composition" book).
2. Label the cover of the notebook with your name, course name and number, and dates in use.
3. Leave at least the first two pages of your notebook empty in order to put in a Table of Contents. Keep updating the table.
4. Number the pages consecutively.
5. Do not rip out pages from the notebook.
6. Start each new experiment on a new page.
7. Record all information (data, calculations observations, etc.) directly in the notebook. Do not use loose paper to recording information.
8. Write neatly, clearly and concisely in pen (black or blue). Do not write in marker or pencil.
9. Do not obliterate any entry.
10. Date all entries.
Prelab Assignments
Preparation is a key to success. For this reason, each laboratory experiment will have an assignment that must be completed before starting it. You will often need to review concepts by rereading your general chemistry textbook. Start you pre-lab assignments early so you can get help from your TA during office hours if needed.

Post Lab Assignments
The post lab assignments consist of two sections: “Scientists Write!” and “Post lab questions.” The section “Scientists Write” is intended to focus on the various disciplinary conventions of the chemistry field. Post lab questions are intended to ensure comprehension of important concepts, to expand on topics discussed in class, and to apply concepts to other settings.
Assignments are due upon arrival to the class. Late assignments will acquire a 20% penalty for each day they are late.

Quizzes
A quiz will be given each week and will be based on the material covered the previous week. Quizzes are given the first 10 minutes of lab session. Makeup quizzes will not be provided for absent or late students.

Lab Safety
In order to protect you, your classmates, and the college properties, the following rules will be enforced at all times.
1. Students must wear adequate eye protection at all times in the lab.
2. Wear appropriate clothing that covers you from your shoulders to your ankles, and closed shoes. Shorts, sandals and open-toed shoes are not permitted. Long hair should be pulled back and held securely away from the face. Laboratory coats provide additional protection to your body and your clothing and are required.
3. Report all accidents immediately to your TA.
4. Never put any thing in your mouth while in the laboratory, i.e., no eating, drinking, chewing gum, tasting chemicals and pipetting by mouth, etc.
5. If you spill a corrosive liquid on your skin, wash the affected area immediately with a large quantity of water and call your TA.
6. Dispose of chemical waste only as specified by the TA. Disposable waste contains are provided. Never dispose substances in the sink or wastebasket unless your TA specifically directs you to do so.
7. Scrupulously clean your work area and hands after completing an experiment.
8. It is mandatory that all glassware and equipment be properly cleaned before leaving the lab. Points may be deducted for noncompliance.

Attendance Policy
Attending all scheduled laboratory sessions is mandatory. If you miss a lab session, you will receive a zero for that lab (post lab assignments, quizzes, and notebook related to any missed lab). No lab makeup will be provided. In case you miss a lab for a legitimate reason such as University sanctioned event, a special arrangement will be provided. Arrive on time.
Withdrawal
If you wish to withdraw from the course you must do so by Monday, June 30, 2014, 11:59 p.m. to receive a W. In case you do not withdraw from the class within the deadline and you do not show up, you will receive an F grade in the course.

Disability Accommodations
If you need academic accommodations, such as private testing, interpreters, note takers, etc., please contact the Students Disability Services (SDS) in Room 132, 📠 407-823-2371. This office will then notify me in writing of the need for an accommodation. No accommodations will be provided until SDS notifies me.

Academic Integrity/Plagiarism
"Plagiarism and Cheating of any kind on an examination, quiz, or assignment will result at least in an "F" for that assignment (and may, depending on the severity of the case, lead to an "F" for the entire course) and may be subject to appropriate referral to the Office of Student Conduct for further action. See the UCF Golden Rule for further information. I will assume for this course that you will adhere to the academic creed of this University and will maintain the highest standards of academic integrity. In other words, don't cheat by giving answers to others or taking them from anyone else. I will also adhere to the highest standards of academic integrity, so please do not ask me to change (or expect me to change) your grade illegitimately or to bend or break rules for one person that will not apply to everyone".

Only nonprogrammable calculators are allowed in exams and quizzes.
Cell phones and other personal digital communication devices will not be allowed during examinations.
# Tentative Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Experiment</th>
<th>Writing</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/13</td>
<td>Introduction and Laboratory Safety Procedures</td>
<td>Overview</td>
<td>None</td>
</tr>
<tr>
<td>05/20</td>
<td>Measurement and Proper Use of Laboratory Glassware</td>
<td>Components of the journal article</td>
<td>Overview</td>
</tr>
<tr>
<td>05/27</td>
<td>Electric Solutions</td>
<td>None</td>
<td>Journal article worksheet</td>
</tr>
<tr>
<td>06/03</td>
<td>Precipitation Reactions</td>
<td>Verb tense SWH</td>
<td>None</td>
</tr>
<tr>
<td>06/10</td>
<td>Gas Law</td>
<td>Writing an introduction</td>
<td>Verb tense SWH</td>
</tr>
<tr>
<td>06/17</td>
<td>Antacid Analysis</td>
<td>Formal report #1</td>
<td>Introduction (see grading rubric)</td>
</tr>
<tr>
<td>06/24</td>
<td>Chemical Kinetics(I) + Peer Review</td>
<td>Peer review &amp; report revisions</td>
<td>Formal laboratory report #1</td>
</tr>
<tr>
<td>07/01</td>
<td>Hess Law</td>
<td>None</td>
<td>Formal laboratory report #1 (revised) + peer review sheets</td>
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<td>07/08</td>
<td>Chemical Kinetics(II)</td>
<td>Abstract &amp; Title</td>
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</tr>
<tr>
<td>07/15</td>
<td>Environmental Solutions (I)</td>
<td>None</td>
<td>Abstract &amp; title</td>
</tr>
<tr>
<td>07/22</td>
<td>Environmental Solutions (II)</td>
<td>Formal report #2</td>
<td>None</td>
</tr>
<tr>
<td>07/29</td>
<td>Final Exam</td>
<td>Final Exam</td>
<td>Formal report #2 &amp; laboratory notebook</td>
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</tbody>
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