Chemistry 1212L  
Principles of Chemistry II Lab  
Spring 2020

Instructor: Dr. Martin R. McPhail  
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Lab: TLC 2108  
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Office Hours: M/Tu 1 pm - 5pm  
F 9:30 am - 11:30 am  
**and by appointment

Course Information
Class: Chem 1212L Section 01 (CRN 10191 - 1 credit hour)  
Meeting Time: Wednesday 2:00 – 3:50 pm  
Room: TLC 3108

Course Description
This laboratory course is designed to complement the material covered in Chem 1212 and is a co-requisite of that course. A series of experiments treat the fundamental behavior of gases, liquids, solids, and solutions including their thermodynamics, kinetics, and equilibria.

Required Materials: You should bring a notebook and pen or pencil to record observations as well as a calculator to perform calculations in lab. This course will employ the MeasureNet system to acquire data in some of our labs. You will need to log in to www.measurenet.net to access your data.

Learning Outcomes
1. Students will apply principles of thermodynamics, kinetics, and equilibria to describe observed behavior of gases, liquids, solids, and solutions.
2. Students will operate cooperatively to solve laboratory challenges through the application of practical, creative, and critical thinking skills.
3. Students will apply Microsoft Excel to analyze chemical data.
4. Students will communicate results and conclusions in a written format.
5. Students will demonstrate good laboratory technique, safe lab conduct, and cooperation with other students.
Course Assessment

Pre-Lab Questions (10%)
To help you prepare ahead of time for each lab, a set of pre-lab questions will be made available as a ‘quiz’ on CourseDen and will be due at the beginning of the corresponding lab period. A maximum of two attempts will be allowed for each quiz.

Laboratory Conduct (15%)
You are responsible for working in a safe, timely manner to complete your experiment in the allotted time. After completion of an experiment, make sure to clean up the lab space, clean and store glassware, and unplug hotplates. Failure to follow safety protocols, complete your experiment on time, or properly clean your lab space will result in a deduction from your Lab Conduct grade.

Lab Reports (60%)
Following each lab, you will be required to complete a lab worksheet (100 pts each). An electronic copy of this document along with any corresponding Excel files must be submitted via the CourseDen Dropbox before the start of the next lab period. One separately completed report per individual is required. Reports are to be typed (no photos of writing). Reports will be graded for proper formatting and content, scientifically accurate and clear discussion, and correct use of Standard English. Reports will not be graded for the accuracy of measurements unless a specific exception is made in the assignment.

Final Exam (15%)
A final exam testing practical laboratory knowledge will be given on the last day of class. This exam will contain questions that can only be answered by correctly executing experimental techniques learned over the course of the semester, so make sure you are confident in your ability to perform these techniques on your own.

Grading Scale
A  90 – 100
B  80 – 89
C  70 – 79
D  60 – 69
F  0 – 59

Grade Calculation Formula
Final Score = (Pre-Lab %)*(0.10) + (Conduct %)*(0.15) + (Report Average %)*(0.70)
            + (Final Exam %) * (0.15)
Course Policies and Information

Extra-Credit Policy
No extra credit is accepted for this course.

Make-up Policy
Laboratory attendance is mandatory. If a student fails to attend a lab or is removed from the lab due to a safety violation, the student will receive a zero for any grades and assignments associated with that lab. If an emergency forces a student to miss that day’s lab, the lab grade will be waived only if official documentation is presented. A maximum of one exemption total will be allowed. No make-up labs will be given.

Student Conduct
Students are obligated to abide by the conduct guidelines in the university catalog. Respect and courtesy of all students while in the classroom is required. The following are also mandatory:

1. Experiments in the chemistry laboratory routinely employ hazardous materials and equipment. Proper dress and personal protective equipment are required to participate in a lab. Failure to follow safe laboratory conduct or observe dress code will result in expulsion from that day’s lab and a zero on you lab report and associated notebook and conduct grades.

2. We will discuss the experiment and associated hazards at the beginning of each lab, so it is important to be on time. Arrival after the conclusion of the pre-lab lecture constitutes a safety hazard and you will not be allowed to perform that day’s lab and receive a zero on the associated lab report and conduct grades.

3. This classroom space is used by multiple classes, so it is imperative to the safety of other students that all stations are thoroughly cleaned after the completion of that day’s experiments. Failure to do so will result in a grade reduction for that lab.

Academic Honesty
‘Sharing’ lab assignments or material therein between students is plagiarism. Such ‘sharing’ can include, but is not limited to, copying any part from another assignment (i.e. yours or another student’s) with no or minimal change. Manipulation of data is a gross ethical violation and is expressly forbidden. Instances of plagiarism or data manipulation will result in a ‘0’ for that report and possible additional action per University regulations on Academic Dishonesty.

Any form of academic dishonesty—including but not limited to cheating or plagiarism—will result in a failing grade on the relevant assignment as well as possible additional action. Please be familiar with the definitions of academic dishonesty and plagiarism as laid out in the Student Handbook, which can be found at the link: http://www.westga.edu/handbook/
Disabilities Act / Accessibility for the Course
If you are a student with a disability as defined under the Americans with Disabilities Act and require assistance or support services, please notify me and provide me with a copy of your packet from Student Services. The university will provide you with resources for any audio/visual needs that you may have with the learning management system or course content.

It is critical that you contact UWG Accessibility Services immediately to find out what accommodations are necessary so we can work together to facilitate your success in this class. Please consult the UWG Accessibility Services site http://www.westga.edu/accessibility or call (678) 839-6428 for more details regarding accessibility for this course.

University Policies and Academic Support
Please review the Common Language for all university course syllabi at the address: https://www.westga.edu/administration/vpaa/assets/docs/faculty-resources/common_language_for_course_syllabi_v2.pdf
This document contains important information regarding Academic Support, Online Courses, Honor Code, Email Policy, Credit Hour Policy, and HB 280 (Campus Carry).

Note on Syllabus Modifications
I reserve the right to modify this syllabus at any time during the course of the term, particularly with regards to course schedule. Students will be notified of all syllabus modifications. In a case where a substantial modification is required, I will reissue a revised syllabus.

Tentative Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>January 8</td>
<td>NO LAB</td>
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<tr>
<td>January 15</td>
<td>Orientation; Using Microsoft Excel in Chemistry</td>
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<tr>
<td>January 22</td>
<td>Lab 12 - Enthalpy of Vaporization</td>
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<tr>
<td>January 29</td>
<td>Lab 13 - Freezing Point Depression</td>
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<tr>
<td>February 5</td>
<td>Lab 14 - Kinetics I (Method of Initial Rates)</td>
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<tr>
<td>February 12</td>
<td>Lab 15 - Kinetics II (Integrated Rate Laws)</td>
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<td>February 19</td>
<td>Lab 16 - Chemical Equilibrium</td>
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<td>February 26</td>
<td>Lab 17 - pH Measurements</td>
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<td>March 4</td>
<td>Lab 18 - Buffers</td>
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<td>March 11</td>
<td>Lab 19 - Titrations</td>
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<td>March 18</td>
<td><strong>SPRING BREAK - NO CLASSES</strong></td>
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<td>March 25</td>
<td>Lab 20 - Qualitative Analysis</td>
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<td>April 1</td>
<td>Lab 20 - Qualitative Analysis contd.</td>
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<tr>
<td>April 8</td>
<td>Lab 21 - Enthalpy of Hydration</td>
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<td>April 15</td>
<td>Lab 22 - Reaction Entropy</td>
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<td>April 22</td>
<td><strong>LAB FINAL</strong></td>
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