CH-103L-60-2 College Chemistry Lab

Instructor: Ms. Showman
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Time: Saturday 0800 - 1210
Location: Chaminade Main Campus, Henry Hall 8
Lab Manual: Handouts

Course Description

Concurrent registration in CH 103 is required. The lab section is designed to enhance your understanding of scientific methods and concepts by bringing a practical understanding of chemistry through hands-on experience in different techniques.

Safety Requirements

Students are **required** to practice safety precautions to include wearing safety glasses; closed toed, covered shoes; and lab coats while performing experiments. Long pants are recommended. If you have long hair, it is recommended to tie it back away from the face. Working in a lab can be messy, so consider wearing very casual attire in case it gets soiled during laboratory work. Only registered students will be allowed in the laboratory. For your safety, food and drink including chewing on gum or candy is not permissible in the lab.

Course Requirements

A scientific hand-held calculator with log function is required.
Bound notebook (three ring binders or wire bound notebooks are not acceptable).
Access to Word/Excel or other word processing and spreadsheet program.

Course Expectations

Students are expected to set up and perform chemistry-based experiments, while adhering to laboratory safety precautions set forth. Students will also need to keep a complete, thorough and relatively neat laboratory notebook.

Attendance and Grading

Attendance during all labs is **REQUIRED**. An excess of more than one (1) absence is unacceptable and will result in a non-passing grade in the course; make-up assignment for the first absence will be a one-page literature review of a peer-reviewed journal article; however, you are still responsible for understanding the lab experiment you missed, as you will be tested on it. Make-up work is only worth 85% of missed lab points. Under exceptional circumstances, alternative

assignments in addition to the lab write-up may be available with a written request accompanied by a written verification for the reason of the absences. Experimental results will be provided by the instructor and consists of the raw data only, which can be used to complete the results, questions, and discussion portions of your lab-write up. The objectives, materials, hazards, and procedure can be completed with the information found in the laboratory handouts.

Most experiments include a lab handout with pre-lab and post-lab questions; these will be due at the beginning of the next lab or can be turned in at the end of lab. Additionally, there are two lab reports. Lab reports have the following format:

Abstract – brief summary of the experiment including results
Introduction – an introduction into the experiment, the theory behind it and state the hypothesis
Methods and Materials – briefly what you did and used to conduct the experiment
Results – tables and figures of the result and a short paragraph stating the results
Discussion/Conclusion – explanation of the results in relation to the hypothesis; discussion of anything that occurred outside of what was expected

As this is a college course, you are required to use a computer equipped with Word, Excel or other word processing/spreadsheet software. Lab reports are to be typed and include tables and figures as appropriate; hand written lab reports will not be accepted.

Literature Review: Peer-reviewed journal articles are available in every scientific discipline and are an important venue for scientists to stay abreast of the latest research in the field. Scientists are able to publish their experimental results, which allows other scientists the opportunity to review and replicate experiments thereby strengthening hypotheses into scientific theories. For the literature review, select one chemistry-related journal article, read it and write a one-page review on what the article was about including the results of the study. The review must be properly cited and turned in with a copy of the journal article.

Lab Notebook: The lab notebook is where all notes, raw data and calculations for experiments will be documented as well as who participated in the experiment and when the experiment occurred. Lab notebooks must be bound and pages numbered in the format (# of ##), must include a title page [Date(s) of Experiment, Description of Experiment, Page Number(s)] and written in blue or black permanent ink (no pencil). Pages cannot be removed from the notebook but can be added permanently (graphs, handouts, etc.).

The course grade will be based on the following:

30% = Lab Handouts
25% = Laboratory Reports
20% = Lab Final
10% = Lab Notebook
15% = Attendance and Attitude (following safety precautions, participation, etc.)

Grading Scale:

Letter grade: A = 90 - 100%
B = 80 - 89%
C = 70 - 79%
D = 60 - 69%
F = 59% and below

Tentative Lab Schedule and Important Dates
(Subject to change; announcements will be made in lecture.)

Week 1 (04/09)	Lab Safety, Measurements, Significant Figures and Conversions
Week 2 (04/16)	Density and Specific Gravity – Pennies Lab Report Introduction to Peer-Reviewed Journals
Week 3 (04/23)	Energy and Specific Heat
Week 4 (04/30)	Moles and Chemical Formulas; Compounds and Their Formulas **Pennies Lab Report Due**
Week 5 (05/7)	Chemical Reactions and Equations
Week 6 (05/14)	Reaction Rates and Equilibrium
Week 7 (05/21)	Stoichiometry and Green Chemistry – Lab Report
Week 8 (05/28)	Gas Laws
Week 9 (06/04)	Acid-Base Titration and Chemical Analysis **Green Chemistry Lab Report Due**
Week 10 (06/11)	Lab Final