

CHEMISTRY 112 LAB (2012)

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Office Hours: Mon. and Wed. (1:00 -1:50); Mon.(3:00-3:50); Thurs. (2:00 – 2:50) and by appointment

INTRODUCTION: This 3 hour laboratory course is designed to complement and supplement your lecture course. Students will work in pairs. Your laboratory grade will constitute 25% of your final course grade. Students must pass both the lecture and lab portion to pass the course.

SAFETY: You are required to wear safety glasses or goggles to perform any experiment. Failure to do so will result in your immediate expulsion from the laboratory and a grade of zero will be recorded as a lab grade for that experiment.

TEXT: Chemistry 112 Laboratory Manual

ATTENDANCE: The laboratory schedule will be followed and, as make-up labs are difficult to arrange, you are expected to attend every lab session. If you miss a lab for legitimate reasons it is **YOUR** responsibility to inform your instructor (preferably in advance) so that you can make it up.

LAB REPORTS: Students will work in pairs **BUT** each student will submit an individual lab report. (Students who submit lab reports that are identical will have their grade reduced.). The lab report must be submitted before the beginning of the next lab. Failure to do so will result in a penalty to be assessed by the instructor.

The lab report should consist of the following:

Introduction-the goal of the experiment

Experimental- only comment on changes to the procedure; do not rewrite the procedure.

Data and Results- present data in a clear and logical manner. Sample calculations should be shown with correct significant figures and units. Comment on the results. Did you achieve the goal of the experiment. How confident are you in your data etc.

In-Lab discussion information should be included in the lab report.

LAB NOTEBOOK: This book should be a bound, composition book, with a table of contents at the beginning.. ALL observations, calculations, deliberations are to be included in this book. This book must be kept by each student AND initialed by your lab instructor at the end of the lab. Draw a line through an incorrect entry and place the correct entry next to it.

QUIZ: A quiz on the upcoming lab will be given before the experiment begins. This is to help assure that the student has read the lab.

GRADING: Your laboratory grade will be based on the following criteria:

Lab Reports (70%)

Lab Notebook (10%)

Lab Quiz (10%)

Lab Technique (10%)

General Rubric for Grading Lab Reports

1) Introduction (~15%)

Discuss the chemistry that is to be explored in the chemistry. Include key concepts.

2) Procedure (~5%)

Refer to procedure in lab manual, then provide any differences from published procedure.

3) Experimental Results (~30%)

Data table

Graphs as appropriate

- Axes labeled
- Scales fully utilized (data fill the graph, not just in one corner)
- Title on graph to know which set of data the graph refers to

Data expressed with appropriate significant figures and units

Include any qualitative observations

Sample calculations included for each type of calculation in report (can be attached at end)

4) Conclusions (~40%)

All individual questions from lab report addressed

- Must include both in-lab and post-lab questions
- Include question as well as answer
- Top marks only given if expand on answer and provide answer as a complete paragraph. Don't just give one sentence answer like you would on an exam or homework. This is a report and as such answer should be a complete thought.

Data compared to expected results (literature values) with % error given.

Summary table required

This not a repeat of earlier raw data, but may include a repeat of calculated values.

Should include final experimental numbers as compared to literature values.

Purpose is to help the reader understand what you learned, not just what you measured.

Discuss possible sources of errors (not just human error) and possible improvements

Overall conclusions

*** This last item is critical, don't just stop with the results.

Instead must comment on what the results mean

5) Overall Impact of Report (~10%)

Neatly typed or printed

Data pages taken straight out of lab manual will not get top marks

Correct spelling

Evidence that time and thought was spent on preparing the report.

CHL 112 Laboratory Schedule

Spring 2012

Jan. 17	Excel Exercise
Jan. 24	Check-in and Ideal Gas Behavior
Jan. 31	Determination of the Gas Constant
Feb. 7	Electrochemistry
Feb. 14	Evaporation and Intermolecular Attractions
Feb. 21	Freezing Points of Solutions
Feb 28	Reaction Rates and Concentration
March 6	Spring Break
March 13	Reaction Rates and Temperature
March 20	Qualitative Chemical Equilibrium
March 27	Evaluation of an Equilibrium Constant
April 3	Behavior of Acids in Solution
April 10	Titration Curves; Determination of K_a
April 17	Polymers
April 24	Last lab report due