CHEM 164 - GENERAL CHEMISTRY LABORATORY I
WINTER TERM, 2010

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Office Hours: One hour before class each week or by appointment

A. COURSE DESCRIPTION AND COURSE LEARNER OBJECTIVES

This course is designed to demonstrate fundamental principles of general chemistry in a laboratory environment. In this course, the primary emphasis is placed on experiments in stoichiometry, colligative properties, chemical equilibrium, acid-base reactions, electrochemistry, and the chemistry of alkanes and alkenes. Upon successfully completing this course, you should become proficient in working safely in the laboratory, collecting pertinent data, and then using that data in the calculations necessary to arrive at sound conclusions based on the laboratory activities.

B. PREREQUISITES

CHEM 162 or Concurrent

C. REQUIRED MATERIALS

1. Textbook: Experiments in General Chemistry Laboratory Manual by Sally Solomon and Susan Rutkowsky - Wiley Custom Services (2005)
2. Safety Glasses - Must be worn whenever you are in the lab. CONTACT LENSES ARE FORBIDDEN.

D. CLASS MEETINGS

Friday Evenings from 6:00 P.M. to 8:50 P.M. in Disque Hall, Room 302

E. ATTENDANCE POLICY

Because this is a laboratory course and not solely a lecture course, attendance is required to receive a passing grade. Any student missing more than two classes will not receive a passing grade. You cannot write and submit a lab report for an experiment you did not actually conduct yourself. As long as you submit all assigned lab reports your lowest lab report grade will be dropped in determining your lab report average--if you miss one report that will be your dropped grade. Missing more than two classes will result in not passing the course.

F. SPECIAL NOTES

If the weather this winter is severe enough to cancel any classes, there may be changes in the attached schedule. Any changes will be announced in class. Drexel University has established a telephone number for Snow and Emergency Information **(215-895-MELT)**. In the event of inclement weather and/or a state or national emergency, please call this number for the latest information concerning University operations. You may also tune to Philadelphia radio station KYW, 1060 AM. The Drexel University closing number for evening classes is **2103**. In case of a night missed because of weather, the sequence of experiments will continue in the order listed and any necessary adjustments will be made at the next class meeting. Therefore, if a night is missed due to weather, the experiment that was to have been done on the canceled night will be done at the next class meeting.

G. ACADEMIC HONESTY POLICY

Drexel University is committed to a learning environment that embraces academic honesty. In order to protect members of our community from results of dishonest conduct, the University has adopted policies to deal with cases of academic dishonesty. Please read, understand, and follow the "Academic Honesty Policy" as written in the official student handbook. Instances of academic dishonesty, such as cheating and plagiarism will be dealt with appropriately.

H. LAB REPORT GUIDELINES

A lab report is to be written and submitted for each experiment you perform. NOTE: All reports are due one week from when the experiment is performed and late reports will be penalized ten points for each week they are late. Any report not turned in at the beginning of the class is considered late. Unless otherwise instructed, the general format for lab reports is as follows:

1. PURPOSE - This section is a brief statement (a few sentences should be enough) indicating the overall objectives of the experiment and the chemical principles to be demonstrated. (10 points)
2. INTRODUCTION - This section is your discussion of the theoretical principles involved in the experiment. Copying it from a textbook will be worth zero points. You do not need to include the experimental procedure unless you have deviated from the instructions given in the lab manual or handout. (20 points)
3. DATA AND CALCULATIONS - This section is a copy of all of the experimental data you collected in the lab and all of the calculations that you are asked to do to evaluate the

quantities required. You can just tear out the appropriate data pages from your lab manual and include them as part of your report provided you have recorded them in a neat fashion. Any graphs required as part of the data treatment should be included as part of this section. (50 points)

4. OBSERVATIONS, DISCUSSION, AND CONCLUSIONS - This section includes any observations you made during the experiment. Also include your conclusions related to your data and how they support the principles the experiment is designed to convey. (20 points)

I. GRADE DETERMINATION

Average of 8 Highest Lab Reports	80% of grade
Attendance, Preparation, Evaluation	20% of grade

NOTE: If you miss any one class, that will be your dropped lab report grade. Missing a second lab will cause a zero to be used for the second report in determining your average.

LABORATORY SCHEDULE

DATE	EXPERIMENT NUMBER/NAME	PAGES IN TEXT
January 8	General Course Outline and Laboratory Safety	
January 15	#1 - Density	15-17
January 22	#3 - Molar Mass by Freezing Point Depression	Handout
January 29	#24 - Measuring Conductance	143-148
February 5	#6 - Beer's Law - Cobalt Chloride	43-46
February 12	#8 - Equilibrium	51-54
February 19	#10 - pH - Titration of Acids (Parts A and C)	59-65
February 26	#19 - Determination of Phosphorus in Plant Food	113-117
March 5	#13 - Alkanes and Alkenes	77-81
March 12	#25 - Water of Hydration	149-151