



Pima Community College

West Campus

CHM 152IN Laboratory Schedule and Supplement Spring 2013

Course Information:

Course Prefix/Number: **CHM 152IN Lab**

Course Title: **General Chemistry I Laboratory**

Semester: **Spring 2013**

CRN (Section Code): _____

Class Days/Times: _____

Site/Room: **Sci K-221**

Instructor Information:

Name: **David A. Katz**

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Availability: **Office hours: _____
If I am not in the office, I may be in the laboratory.**

Laboratory Manual: Selegue, Thomas and David A. Katz, Editors, **General Chemistry in Action**, 2nd Edition, Hayden McNeil, 2011 (Note: This laboratory manual is designed for 2 semesters, CHM 151 and 152.)

Chemical Splash Goggles: These are available in the Pima College Bookstore or at hardware or home centers in the Tucson area. The type of safety goggles required will be explained in the safety lecture given in the second week of lab.

Online Homework and Laboratory Program: Mastering Chemistry (program is included with textbook)

Laboratory Notebook: You are required to have a laboratory notebook. Options for a laboratory notebook are:
A bound laboratory notebook with duplicate pages – available at the Pima C.C. bookstore.
A composition book with sewn-in pages - available at most area stores
An electronic laboratory notebook at www.sparklix.com There is no cost for this notebook
Check with your laboratory instructor as to the type of notebook required for this class.

CHM 152IN Laboratory Schedule for Spring 2012

Week of	Days	Experiment
Jan 14-18	Mon-Fri	Meet classes, distribute lab schedules. No experiment
Jan 22 – 28	Tues-Mon	Safety Lecture (NOTE: Safety test given online through Mastering Chemistry) Check-in Review: How to write chemical formulas and equations using Word How to construct data tables using Word or Excel How to construct graphs using Excel
Jan 29 –Feb 4	Tues-Mon	Freezing Point Depression of Aqueous Solutions (Lab Manual, p 129)
Feb 5 – 11	Tues-Mon	Kinetics of the Oxidation of Iodide Ion by Hydrogen Peroxide (Lab Manual, p. 77)
Feb 12 – 18	Tues-Mon	Measurement of the Kinetics of the Bleaching of Crystal Violet Dye: Part 1: Determination of Rate Law and Rate Constant (Lab manual, p 87)
Feb 19 – 25	Tues-Mon	Measurement of the Kinetics of the Bleaching of Crystal Violet Dye : Part 2: Determination of the Activation Energy of the Reaction (Lab manual, p 79)
Feb 26 – Mar 4	Tues-Mon	Exploring Chemical Equilibrium Using LeChâtelier's Principle (Lab Manual, p. 91)
Mar 5 – 16	Tues-Fri	Spring Break – No experiment
Mar 18 – 22	Mon-Fri	The Spectrophotometric Determination of an Equilibrium Constant (Lab Manual, p. 97)
Mar 25 – 29	Mon-Fri	Titration of Strong and Weak Acids and Bases (Lab Manual, p. 109)
Apr 1 – 5	Mon-Fri	Buffer Capacity of Buffer Solutions (Lab Manual, p. 121)
Apr 8 – 12	Mon-Fri	The Solubility Products of Slightly Soluble Metal Hydroxides (Lab Manual, p 101)
Apr 15 – 19	Mon-Fri	Sunscreens: Preparation and evaluation (Download from CHM 152 web page)
Apr 22 – 26	Mon-Fri	The electrochemistry lab: (Download experiments From CHM 152 web page) Electrochemical cells Electroplating a leaf or other small objects
Apr 29 - May 3	Mon-Fri	Final checkout
May 6 - 10	Mon-Fri	Final Exams start May 8

Laboratory Policies

This is an integrated class, which means that your laboratory grade is part of your final course grade. You must pass both the lecture portion and the laboratory portion to pass the course.

You are expected to read each experiment and check the safety precautions for all chemicals used in the experiments before coming to class. A pre-lab assignment may be required. Your laboratory instructor will provide more information on these requirements.

If you are not prepared for lab, you may be asked to leave and will receive a grade of zero for that laboratory experiment.

Attendance to lab is required as part of this course. You are expected to be in class at the designated time. If you are late for lab, or leave early without completing an experiment, you will not be given credit for attendance or for laboratory work for that day.

Laboratory reports follow the format outlined by your lab instructor. (A suggested laboratory report format is given in the Appendix of the General Chemistry in Action laboratory manual.) Data analysis calculations, graphs, and questions must be completed for each laboratory report.

Reports are due no later than **one week** after the experiment is completed.

Laboratory reports are graded based on neatness, completion of introductory information, completion and presentation of data, sample calculations, summary of results and conclusions, and answers to data analysis questions.

Laboratory reports may be graded on a 10 point, 25 point, 100 point, or other point scale, by your laboratory instructor.

Missed or incomplete experiment reports may be graded as a zero.

If a laboratory report is not turned in for any experiment, the maximum grade you can obtain for that experiment is a 50 (out of 100).

Questions based on the laboratory experiments and calculations may appear on exams and quizzes in the lecture portion of this course. You are responsible to know how each laboratory experiment works (theory and general procedure) and how to do the calculations.

LABORATORY SAFETY

Laboratory safety is a major component of working in a chemical laboratory. At the beginning of the semester, you are given a safety lecture in the laboratory. The safety information is also printed in the General Chemistry in Action laboratory manual.

The laboratory safety test is administered online through the Mastering Chemistry program. The safety test consists of 30 questions and will be timed for 40 minutes. You must obtain a score of 100% in order to pass the safety test. You will have 3 chances to pass the safety test with a grade of 100% in the week between the safety lecture and up to 48 hours before your first laboratory experiment. If you do not pass the safety test, you will not be permitted to work in the laboratory and will receive a grade of zero for the first experiment. You will have another 3 chances to pass the safety test in the following week.

You must abide by the safety rules during the semester. This includes wearing safety goggles when working with chemicals, wearing closed shoes, not sandals or flip-flops, appropriate dress, and following

proper methods of chemical disposal. Non-compliance may result in you being asked to leave the laboratory with a grade of zero for that day.

THE LABORATORY NOTEBOOK

INTRODUCTION

Chemistry is an experimental science. As such, much of the progress of chemistry depends on the communication of scientific data and experimental results between researchers. It is important, therefore, that a course in chemistry should teach how to accurately record scientific data and experimental results through the use of the laboratory notebook and laboratory reports.

THE LABORATORY NOTEBOOK

The laboratory notebook is meant to be a permanent record of the experimental data and observations that one measures or observes during experiments. During the laboratory period all data and observations are to be recorded **DIRECTLY** into the laboratory notebook and **NOT** on separate sheets of paper nor the data pages of the experiment or laboratory manual.

The laboratory notebook is meant to be used as a **WORKBOOK**, it is functional, not pretty. It will contain both satisfactory and unsatisfactory results, errors and corrections, calculations, graphs, and other information from the laboratory experiments. Since all entries are made in the laboratory, it is expected that the information be orderly, legible, and clearly labeled, sufficient so that the information is comprehensible to someone with training comparable to your own. The notebook will not be graded on its appearance, it will be graded mainly on its content.

The laboratory notebook must be a **BOUND** book with sewn-in pages and a cover, such as a "Composition Book" or equivalent. Spiral, loose-leaf, and perfect binding (pasted-in pages) notebooks are **NOT ACCEPTABLE**. Quadrille pages are preferred, but lined pages are acceptable. An alternative to the hard copy notebook is electronic laboratory notebook at www.sparklix.com. This will be explained in class.

The suggested guidelines for keeping the laboratory notebook are given in Appendix G of the General Chemistry in Action laboratory manual. (NOTE: Your laboratory instructor may request that the information you record in your laboratory notebook differs from this format to fit the requirements for your particular laboratory course.)

LABORATORY REPORTS

CHM 152 is a science and engineering major class. You are expected to be able to write an organized laboratory report.

A laboratory report is the means by which a researcher or research team communicates the result of an experiment or series of experiments to his/her colleagues. It is a summary of the important information which a researcher recorded in his/her laboratory notebook with detailed explanations of the results. Such reports are often communicated as research papers at scientific meetings or are published in scientific journals.

The laboratory report is the means by which your instructor can determine your comprehension of the scientific principles involved in an experiment as well as to evaluate your ability to make careful measurements and observations, to organize your experimental data, to calculate numerical results, and to analyze and explain your final results.

A single laboratory report is required for each experiment. If an experiment is divided into two parts, the laboratory report is for the entire experiment.

ONE WEEK after you have completed each experiment, a laboratory report must be handed in to your instructor. **The report should be printed on 8½ x 11 inch paper** and stapled together with a single staple in the upper left-hand corner. **All graphs (when required) must be drawn on graph paper and clearly labeled or, preferably, constructed using a program such as Excel.** The report must be written in the third person (do not use: I, me, my, we, our, etc.) and should **follow the suggested guidelines given in Appendix H of the General Chemistry in Action laboratory manual.** (NOTE: Your laboratory instructor may request that your reports differ from this format to fit the requirements for your particular laboratory course.)

Your laboratory instructor may require individual laboratory reports or a single team report. If the laboratory report is a team effort, all members of the team should contribute to the report.

If your laboratory reports are individual reports, members of the same team will have identical data, but the laboratory reports should not be identical.

The laboratory report is part of your laboratory experiment. The experiment is **not** considered to be complete until the laboratory report has been received. You cannot receive higher than a 50% grade for any experiment without a laboratory report.

Not having the data from the experiment because your lab partner did not give it to you is not an excuse for not completing a laboratory report.

LATE LABORATORY REPORTS will be down-graded based on the number of days the report is late. Reports that are more than one class late will be graded on a pass/fail basis only (pass = "D"). Reports more than two classes late may not be accepted, at your instructor's discretion, and you may be assigned a grade of "zero" for that experiment. (If you are absent on the day a laboratory report is due, email the report to your instructor or take the report directly to your instructor on the day you return to school or leave it in his/her mailbox in the department office building.)

INCOMPLETE LABORATORY REPORTS will be graded "as is" with points deducted for missing sections.