

Chemistry 142 - Chemical Principles Laboratory
Fall 2012 – CON 489

GENERAL INFORMATION

| Section | Day | Recitation | Lab | Instructors |
|----------------|------------|-------------------|--------------|---------------------|
| CHEM142L-001 | Monday | 12:20 PM | 1:10-4:10 PM | Dr. Vesa Nevalainen |

Dr. Cielito King is the Instructor in charge for CH-142. Any administrative (changing sections, absences) matters must be brought to her. Room 405, phone # 508.531.2115 , c2king@bridgew.edu

CHEM 142 laboratory information, including lab handouts and syllabus, can be downloaded from Dr. King's homepage at <http://webhost.bridgew.edu/c2king/> *You will be expected to check this page on a regular basis for updated information concerning laboratory.*

Room: Pre-lab recitations and labs are held in the rooms indicated.

Required Text: Handouts available online.

Required Supplies: Lab goggles (meeting ANSI and CSA standards) are required and may be purchased either from the bookstore or the Biochemistry Club for \$5-10 a pair. **No one will be admitted to the lab without goggles!** Some of the experiments require the use of a laptop computer. At least one member of each group will need to bring a laptop. The experiments that require a computer are identified below. A permanently bound lab notebook (no loose-leaf binders, spiral notebooks or writing tablets) is mandatory. **No open-toed footwear or short shorts are allowed.**

Recitation and laboratory attendance are mandatory! It is expected that you show up **prepared and on time** for your recitation; you will be marked as absent and receive a zero lab grade if you are more than 10 minutes late. **THERE ARE NO MAKE-UP LABS!!!** All laboratory absences will result in a zero lab grade, although your lowest grade will be dropped. The second missed lab will result in a score of zero, which will be counted. Exceptions may be made for college-sanctioned events and illness or personal emergency – you must contact Dr. King as soon as possible.

If you miss three labs for any reason, you will receive a zero overall lab grade, and an F in the course.

GRADING POLICY. Your final lab grade will be worth 20% of your final course grade. Each lab will be graded on a 100-point basis. The laboratory grade consists of 3 components:

- Advanced study assignment from lab text (20 points). Turned in the beginning of recitation. You are expected to show your work for all calculation problems (use a separate sheet if necessary).
- Data and calculations from lab manual (80 points). Turned in at the beginning of recitation of the following week. You are expected to show your work for all calculation problems (use a separate sheet if necessary).
- Weekly laboratory notebook (20 points/lab). Your lab instructor will check and initial your lab notebook before you begin the experiment and you will not be allowed into lab without it. You should prepare your laboratory notebook even for an experiment that you missed. Refer to the attached **Laboratory Notebook Guidelines for CH141-142.**

All data in your lab text and answers to laboratory questions must be answered in ink.
Any late assignment will be penalized with 20 points.

Recitation. The first 50 minutes of each laboratory will be a pre-lab recitation, which may consist of two parts. Part I will involve review of 1-2 comprehensive questions assigned from the lecture text, but these will not be collected. The purpose of these problems is to learn advanced problem-solving methods that you will need for the exams. Part II of recitation will address any questions related to the lab procedures. The lab itself is expected to take about 2 hours if each student is adequately prepared.

You will be assigned to work with a lab partner. You and your lab partner are encouraged to work together as a “team” in carrying out the lab experiment, and completing the Data and Calculations from the lab text. However, blatant copying of any laboratory work will result in a zero grade to all parties involved.

CHEM 142 LABORATORY SCHEDULE – Fall 2012

| MONDAY | |
|--------------------------------|--|
| 9/10 check-in Lab#1 | |
| 9/17 Lab#2 | |
| 9/24 Lab#3 | |
| 10/01 Lab#4 | |
| 10/08 Holiday-no lab | |
| 10/15 Lab#5 | |
| 10/22 Lab#6 | |
| 10/29 Lab#7 | |
| 11/05 Lab#8 | |
| 11/12 Holiday-no lab | |
| 11/19 Lab#9 | |
| 11/26 Lab#10 | |
| 12/03 Lab#11 check-out | |

| Lab # | Title of Experiment |
|-------|---|
| 1 | (Safety Training & Video, Check-in) Aqueous Chemistry Review, Precipitation reactions |
| 2 | Freezing point depression |
| 3 | Preparing solutions |
| 4 | Kinetics: A clock reaction |
| 5 | Le Chatelier's Principle |
| 6 | Determination of an equilibrium constant |
| 7 | Quantitative analysis of blue dyes in energy drinks |
| 8 | Lecture worksheet |
| 9 | Buffers and their properties |
| 10 | Acid-base titration |
| 11 | Heat and calorimetry, Check-out |

Laboratory Notebook Guidelines for CHEM 141-142

Your notebook should follow the following format:

1. Notebook pages are permanently bound
2. Each section must be numbered and labeled with the headings given below (1point)
3. Each page (front and back) of your notebook should be numbered **consecutively** (1p)
4. Table of Contents (see below) (1point)
5. **Written in ink** (1point)
6. Proper spelling, grammar, sentence structure, and neatness (1point)

Table of Contents. The Table of Contents always starts on page one of your notebook. You will need to update the Table of Contents for each new lab with the date and brief title of each experiment, and the notebook page number on which the lab begins.

Your Advance Notebook Preparation (must be written in your lab notebook in the order listed before you may enter the lab):

I. Title of the Experiment and Date. (1point)

II. Purpose of the experiment. One or two sentences describing exactly **what you are determining** and **how you are going to determine it**. (3 points)

III. Chemical Reactions (if available). (3 points)

IV. Table of Reagents. For each experiment you must make a table of all reagents, including the: a) name, b) molecular formula, c) molecular weight, d) structure (you may check any source including chemfinder.cambridgesoft.com). **A reagent is any complete compound used in the experiment.** These can be found in the procedure. **Do not include individual ions, products or unknowns.** (6 points)

V. Health, Environmental and Waste disposal precautions for the chemicals involved. You may check any source including Chemfinder: <http://chemfinder.cambridgesoft.com/>) or MSDS database: <http://hazard.com/msds/index.php> (1point)

VI. Mathematical equations used in calculations. (1point)