CHEMISTRY 142B, Autumn 2006
SYLLABUS, POLICIES AND PROCEDURES
LECTURES: M, W, Th, F, 9:30-10:20 AM, KNE 130
Web Address: http://faculty.washington.edu/callis/Chem142/Au-02/

Prerequisites: Completed high school chemistry and placement into Math 120 or higher.
Add or Drop: Go to Bagley 271 (stockroom)

INSTRUCTORS
Class: Professor James Callis Office: BAG 204A Telephone: 543-1208
E-mail: callis@u.washington.edu
Office hours: M, 11:30 AM - 12:20 PM, and W, 11:30 AM - 12:20 PM,
204A Bagley Hall

Lab: Dr. Andrea Carroll Office: CHB 204K Telephone: to be announced
E-mail: ageddes@u.washington.edu
Office hours: T 1:30-2:20, W 10:30-11:20

Teaching Assistants:

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<tr>
<th>Section</th>
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* Head TA

MATERIALS
Except where indicated, all are available from the University Bookstore

- Chemistry 142 General Chemistry Laboratory Manual (required).
- WebAssign access card. It can also be purchased online at http://www.webassign.net. (required)
- Scientific calculator (required); any SAT approved calculator is allowed.
- Laboratory approved goggles (required); snow, swimming, or workshop goggles are not approved.
- Lab coat, University Stores, 1959 NE Pacific Ave, Open Monday to Friday 8:30 AM - 4:00 PM, (206) 543-1980 (required).
- Callis, Chemistry 142 Lecture Notes. Available on line at the class web site or from the bookstore. Note: these lecture notes are incomplete by design. We will fill in the blanks together during lecture.
COURSE DESCRIPTION
The course consists of:
- 4 lectures a week
- 1 quiz section a week
- 1 three-hour laboratory session per week (6 total).
Attendance at ALL course components is essential to obtain a satisfactory grade in this course.

COURSE OBJECTIVES
The central focus of this course is to develop quantitative problem solving skills. You will:

- Learn to clearly pose a problem and solve it, giving detailed solutions for all aspects of that problem. These can include central and auxiliary equations with any needed conversion factors.
- Learn to report precision in input data and derive solutions to problems containing the appropriate number of significant figures.
- Use these skills to master the following fundamental chemistry topics:
  - Atomic nature of matter
  - Stoichiometry
  - Major Classes of Inorganic Chemical Reactions
  - Gases
  - Chemical Equilibrium
  - Acids and Bases
  - Applications of Aqueous Equilibria
- Conduct laboratory exercises that:
  - Emphasize and apply the concepts learned in lectures.
  - Develop laboratory, data analysis, and scientific writing skills.

ACADEMIC ETHICS
Original work performed in good faith is assumed on all laboratories/exams/worksheets.
It is presumed that the data you record and report in laboratory is your work. University rules (Handbook, Vol. IV, Part 9, Chapter 1, Executive Order #61) define scientific and scholarly misconduct to include the following forms of inappropriate activities:

- Intentional misrepresentation of credentials
- Falsification of data
- Plagiarism

Failure to adhere to this code of ethics will result in prosecution to the fullest extent (see [http://www.washington.edu/students/handbook/conduct.html](http://www.washington.edu/students/handbook/conduct.html) for specifics). In short, if you have not done something yourself, do not attempt to pass it off as original work.

GRADING
2 midterm exams (1 hr. each, 100 pts. each) 30 %
Quizzes (lowest quiz score dropped) 12 %
Homework (lowest HW score dropped) 8 %
Laboratory 20 %
Final exam (2 hr.) 30 %
TOTAL 100 %
Grade Distribution – The undergraduate program committee policy states that the final mean GPA in Chemistry 142 should fall within the range 2.6 +/- 0.2. It is the Chemistry Department’s policy not to make grade changes of 0.1 after final class grades are submitted to Records.

Late Policy - No late work will be accepted.

LECTURES
An approximate schedule that assigns textbook material to be covered each week is on page 7.
You are responsible for material covered in class AND in the textbook. Attendance at lectures is expected.
Out of respect for your classmates, please observe the following rules:
• Arrive on time. If an emergency causes you to arrive late, please enter quietly through the rear doors where available.
• Do not begin to pack up your books etc. before the end of lecture.
• Do not have conversations with your neighbor during lecture.
• Turn off your cell phone or pager.

LABS
The lab consists of a pre-lab exercise, lab work and post-lab report. The lab schedule is given on page 7.

Attendance: You must attend every laboratory session. If you miss more than one lab without an excused absence, you will fail the class. The same polices described about missing an exam apply here. If you do miss lab, please contact your TA (if possible in advance of the lab) and the stockroom (Bagley 271). We will try to schedule you into an alternate lab time. See Dr Harvey, Bagley 292, if you need to be excused (there is no alternate time, or you need to be assigned a make up lab). See the laboratory manual for more details.

Safety: There is an element of hazard in any laboratory course. You are required to follow the safety instructions as outlined in your laboratory manual. In particular, you are required to wear approved safety goggles and a lab coat during all the experiments. If you do not dress appropriately, you will not be allowed to attend the lab session. No open-toed shoes, no bare legs or ankles will be permitted, nor will any clothing that interferes with lab activity.

Pre-labs: This course uses internet-based pre-labs exclusively. You will both receive and submit your assignments online via the internet. For more details, see the WebAssign description under homework. Check the due dates for the pre-labs to avoid being shut out. You need to score \( \geq 3.5/5 \) (70%) on the prelabs to be considered prepared for lab. If you do not complete the prelab with a score \( \geq 70\% \), you will lose an additional \( 5/35 \) (12.5%) of the lab report points. Also, the purpose and procedure sections of your notebook must be completed before your lab session.
Lab Notebook: Bound laboratory notebook with numbered pages (not loose leaf or spiral) and carbons are available at the bookstore. *Please note the special nature of this lab notebook.*

- All recording and reporting must be in this notebook IN INK. Line through your errors neatly instead of erasing or whiting out.
- On the first page of your notebook write (i) your name and student number, (ii) Autumn Quarter 2006, (iii) the course number, Chem. 142, and (iv) your section.
- Start the experiments on page 2.
- Write only on the right-hand page of the notebook while in the laboratory and for the purpose and procedure sections.
- *Be prepared to hand in the carbons at the end of each lab period.*

During Labs: Perform only assigned work. If any deviations are necessary, consult your TA first. Record observations (data), perform all necessary calculations, and based on your results, come to some conclusion.

Before You Leave the Lab:
Your TA will check and make sure that you have done all assigned work He/She will initial your lab notebook and ask for a duplicate copy of your work.

Post-Lab Reports

Exp. #1: Statistical Analysis of Experimental Data
Do not go to the lab for this experiment. Perform this statistical analysis on your own. Go to the study center (Bagley 330) or see your TA for help. WebAssign Submission (20 pts). Check WebAssign for due date.

Exp. #2: Identification Based on Percent Metal Composition.
Percent KClO₃ in a KCl/KClO₃ Mixture.
Safety Exercise
Excel Template Submission (40 pts). Due at the beginning of the next Lab.

Exp. #3 Stoichiometry I. Excel Template Submission (40 pts). Due at the beginning of the next Lab.

Exp. #4 Stoichiometry II. Excel Template Submission (40 pts). Due at the beginning of the next Lab.

Exp. #5 Molecular Weight of a Low Boiling Liquid.
Excel Template Submission (40 pts). Due at the beginning of the next Lab.

Exp. #6 Titrations. Print out the Report Form from the Chem. 142 lab web site Due at the beginning of the next Lab. (40 pts).
QUIZ SECTIONS—Be on time! See page 7 for schedule

The first part of the quiz section is devoted to a quiz on the material covered the previous week. The last part of the quiz section is devoted to helping you with difficulties in understanding the lecture and lab materials.

HOMEWORK
This course uses internet-based homework exclusively.
You will both receive and submit your assignments online via the internet. Pay very careful attention to the due date. WebAssign keeps its own time and will cut you off at the exact deadline.

How to access WebAssign:

1) Go to www.webassign.net/washington/login.html
2) Click on the button labeled “Log In” which takes you to the UW NetID weblogin page:

UW NetID: [Your UW Net ID (e-mail address without the "@u.washington.edu")]
Password: [Your UW Net ID password]

3) Click on the “Log In” button which takes you back to WebAssign.

NOTES:

• Each student must purchase an access code (~$6) to use WebAssign.

• Access codes can be purchased either in person at the UW bookstore, or online at WebAssign's website. Enter the code in the assignment titled "WebAssign Registration". There is a 2-week grace period before access codes are enforced.

• Click on the "Student Guide" for information about how to use WebAssign. Also, the “Intro to WebAssign” assignment will help you learn how to use WebAssign.

• If you need additional help, see your TA or go to the Chem Study Center (BAG 330).

GENERAL HELP RESOURCES

• Instructor: See instructor office hours on the front page

• Teaching Assistant: Your teaching assistant (TA) will advise you of his/her office hours during the first week of the quarter. Your TA is an important person to your success.

• Chemistry Study Center, Bagley 330: The study center is open M to F from 9:00 am to 6:00 pm. The study center is staffed with experienced teaching assistants.

• The Center for Learning and Undergraduate Enrichment. This organization holds tutorial sessions in the evenings. See: http://depts.washington.edu/clue/dropintutoring.html

• Undergraduate Services, Bagley 292/294. The staff can help with scheduling problems, clicker or webassign problems, or issues that arise about the course.
MIDTERM EXAMS

There are 2 midterm exams. Midterm #1 (Ch. 1-2) Thursday, October 12 and Midterm #2 (Ch. 3-5) Thursday, November 16. Chemistry knowledge is cumulative so questions on exams will often depend on knowledge from earlier chapters.

Exam Rules
1. Bring several number 2 pencils, your calculator, and a photo ID to all exams.
2. You must sit according to the seating charts, posted on the walls in the front of the classroom a few days before the exam.

Grading
- The fifty minute exams will be returned in quiz section.
- Keys to exams will be posted on the Chem 142 bulletin board in Bagley Hall.

Re-grading
- To have your exam re-graded, it must be given to your TA within 48 hours of its return to you along with a note explaining what you want reconsidered.
- We reserve the right to re-grade the entire exam, so you may lose rather than gain points.

Absences
If you are absent from a midterm examination through sickness or other valid unavoidable cause, you will be given a make-up exam.

Examples of unavoidable causes include: illness, death or serious illness in the immediate family, and, provided previous notification is given, observance of regularly scheduled religious obligations and attendance at academic conferences or field trips, or participation in university-sponsored activities such as debating contests or athletic competition. Athletes, bring a letter from your coach with your schedule for the quarter to Dr. Tracy Harvey in Bagley 294.

Procedures for making up a midterm exam:
1. Report your absence from an hourly examination within 72 hours to Dr. Tracy Harvey in Bagley 294, and
2. Bring proof of your emergency (a doctor's note, an accident report, a memorial folder, or similar documentation). The documentation must include a contact name and telephone number.
3. Dr. Harvey will notify the instructor of the status of your absence. If your absence does not meet the above criteria, you will be given a zero for the exam.

FINAL EXAM - Wednesday, December 13, 8:30-10:20, Rm 130 Kane Hall, (50% Ch. 1-5, 50% Ch. 6-8).

The first half of the final will cover lecture material presented since Midterm Exam 2. The second hour of the final will be a cumulative review of all lecture material through Midterm Exam 2.

Note: If you are absent from the final examination, and you are ineligible for an incomplete according to the UW regulations, a course grade of 0.0 will be given. If an incomplete is given, you must take the final exam for the same course in the next regular academic quarter in which it is offered to remove the incomplete.
# COURSE SCHEDULE:

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<tr>
<th>Week</th>
<th>Zumdahl Chapter</th>
<th>Lecture Topic</th>
<th>Quiz Section Topic</th>
<th>Laboratory Topic</th>
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<td>2</td>
<td>10/02-10/06</td>
<td>2</td>
<td>Atoms, Molecules and Ions (3 Lectures: M, Th, F). Lab 1 Lecture, W.</td>
<td>Quiz 1: Ch 1 and Appendices. Discuss atomic theory.</td>
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<td>Stoichiometry (2 Lectures: M, F). Lab 2 Lecture, W. <strong>Midterm #1</strong> (Ch. 1-2) Th, 10/12.</td>
<td>Quiz 2: Ch 2. Discuss stoichiometry.</td>
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<td>Gases (3 Lectures: M, Th, F). No Lab Lecture, W.</td>
<td>Quiz 5: Ch 4. Discuss gases.</td>
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<td>12/11-12/15</td>
<td>1-8</td>
<td><strong>Final Exam, W, 12/13, 8:30 – 10:20 AM.</strong> Rm 130 Kane Hall, (50% Ch. 1-5, 50% Ch. 6-8).</td>
<td>No Quiz Sections.</td>
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If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, 448 Schmitz, 543-8924 (V/TDD). If you have a letter from Disabled Student Services indicating you have a disability that requires academic accommodations, please present the letter to me so we can discuss the accommodations you might need for this class.
### DISCUSSION AND LAB SECTIONS

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<th>Section</th>
<th>TA</th>
<th>Quiz Day</th>
<th>Time</th>
<th>Location</th>
<th>Lab Day</th>
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### Keys to Success

1. Attend ALL classes, pay close attention and take notes.
2. Chemistry is sequential and hierarchical. You must learn and digest today’s lecture before you can expect to understand tomorrow's lecture. Study at least two hours for each hour of lecture. Spend one hour for every hour of lab. Find a place that allows for periods of uninterrupted study. Skim through chapter or sections to be covered in the next lecture.
3. Make daily, weekly and quarterly plans and follow plan.
4. Practice what you are to do on the exams. Work many problems.
5. Talk chemistry with fellow Chem. 142 students. The study center (Bagley 330) is a good meeting place.