

CHEMISTRY 142A

SYLLABUS, POLICIES AND PROCEDURES

SPRING QUARTER, 2006

Lectures: M, T, W, F — 9:30 - 10:20 a.m. — 131 BAGLEY

Web address: <http://depts.washington.edu/chemcrs/index.html>

Instructor: Professor William H. Zoller

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Office Telephone: 543-1643

Office Hours: M T W F — 10:30 – 11:20 a.m., 303E BAG

Lab Instructor: Dr. Frazier Nyasulu

Office Hours: Th, 10:00 a.m., 330 BAG

Office: 311E BAG **Phone:** 685-8440

E-mail : nyasulu@chem.washington.edu

Head TA: Beth Thompson

E-mail: thompsoe@u.washington.edu

Prerequisites: Completed high school chemistry and placement into **Math 120 or higher**.

Add or Drop: To add or drop the class, go to the stockroom, Bagley 271.

CLASS SCHEDULE

Day	Week	Reading	Day	Week	Reading
M	March 27	Chapter 1	M	May 1	Chapter 4
T	March 28	Chapter 1/2	T	May 2	Chapter 4/5
W	March 29	Lab Lecture #1	W	May 3	Lab Lecture #4
F	March 31	Chapter 1/2	F	May 5	Chapter 5
M	April 3	Chapter 2	M	May 8	Chapter 5
T	April 4	Chapter 2	T	May 9	Chapter 5
W	April 5	Chapter 2	W	May 10	Chapter 5/6
F	April 7	Chapter 2	F	May 12	Chapter 5/6
M	April 10	Chapter 3	M	May 15	Chapter 5/6
T	April 11	Chapter 3	T	May 16	Chapter 6
W	April 12	Lab Lecture #2	W	May 17	Lab Lecture #5
F	April 14	Chapter 3	F	May 19	Exam #2
M	April 17	Chapter 3	M	May 22	Chapter 6/7
T	April 18	Chapter 21	T	May 23	Chapter 7
W	April 19	Chapter 21	W	May 24	Lab lecture #6
F	April 21	Exam #1	F	May 26	Chapter 7/8
M	April 24	Chapter 21/4	M	May 29	Holiday
T	April 25	Chapter 4	T	May 30	Chapter 8
W	April 26	Lab Lecture #3	W	May 31	Chapter 8
F	April 28	Chapter 4	F	June 2	Last day of instruction

FINAL EXAM — **See below

Note: We hope to follow this schedule, but we may go slower or faster.

†Voice mail may be left at this phone number.

** Check the Academic Calendar for the University of Washington, Spring Quarter, 2006, Final Examination Schedule online at the following website: <http://www.washington.edu/students/reg/calendar.html>

Materials

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

- ❑ Zumdahl, *Chemical Principles*, Fifth Edition, Houghton Mifflin (required).
- ❑ Kelter, *Study Guide, Chemical Principles*, Fourth Edition (optional).
- ❑ *Chemistry 142 General Chemistry Laboratory Manual*, available at the University Bookstore (required).
- ❑ Scantron forms, scientific calculator, goggles, and Webassign access card (all required). WebAssign access can also be purchased online at <http://www.webassign.net>.
- ❑ Lab coat, University Stores, 1959 NE Pacific Avenue, open Monday to Friday 8:30 a.m. - 4:00 p.m., (206) 543-1980 (required).

Course Description

The course consists of:

1. 4 lectures a week
2. 1 quiz section a week
3. 1 three-hour laboratory session per week (6 total).

Attendance at ALL course components are essential to obtain a satisfactory grade in this course. Your grade is based on homework, laboratory, quizzes, and exams.

Course Objectives

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

- Learn to clearly pose a problem with detailed solutions for all aspects of that problem. These can include central and auxiliary equations with any needed conversion factors.
- Learn to report precision input data in solutions to problems (contains the appropriate number of significant figures).
- Use these skills to master the following fundamental chemistry topics:
 - ◆ the atomic nature of matter
 - ◆ stoichiometry
 - ◆ major classes of inorganic chemical reactions
 - ◆ gases
 - ◆ chemical equilibrium
 - ◆ acids and bases
 - ◆ applications of aqueous equilibria
 - ◆ nuclear chemistry
- Conduct laboratory exercises that:
 - ◆ emphasize and apply the concepts learned in lectures.
 - ◆ develop laboratory, data analysis, and scientific writing skills.

Weekly Quizzes

There will be a quiz given in **Thursday quiz section every week**. You should take the practice quiz on Professor Zoller's web page each week before the Thursday quiz to see what the quiz will be like!

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> for specifics). In short, if you have not done something yourself, do not attempt to pass it off as original work.

GRADING	Bonus Points	1%
	In class Clicker Questions (if greater than 60% participation, you get 100% of this grade)	4%
	2 midterm exams (1 hr. each, 100 pts. each)	30%
	Quizzes (10, 10 points each)	8%
	Homework (10, 10 points each)	8%
	Laboratory	19%
	<u>Final exam (2 hr.)</u>	<u>30%</u>
	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.*

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 Chemistry Study Center (Bagley 330) is a good meeting place.

Lectures

An approximate schedule assigns chapters to be covered each week. 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, seated and ready to listen when the lecture begins. 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.

Computer Notes

- You may download them from Professor Zoller's web page, or
- Purchase a copy at the Odegaard Library Copy Center.

LABS

The lab consists of a pre-lab exercise, in-lab work and a post-lab report. The lab schedule is given on page 8.

Attendance: *You must attend every laboratory session - no make-up lab is offered.* If you miss more than one without an excused absence, you will fail the class. The same policies described about missing an exam apply here. If an absence is unavoidable, please contact your TA (if possible in advance of the lab) and the stockroom (Bagley 271). See Dr. Harvey, Bagley 292, if you need to be excused. See laboratory manual for more details.

Safety: There is an element of hazard in any laboratory course. You are required to follow the safety rules 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 perform the experiment and will receive a grade of '**0**' for that report. **No open-toed shoes, no bare legs or ankles.**

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 should score $\geq 75\%$. If you do not complete the prelab with a score $\geq 75\%$, you will lose 25% of the lab points. The purpose and procedure sections of your notebook must be completed before your lab period.

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) Spring Quarter 2006, (iii) the course number, Chem. 142A.
- Start the experiments on page 2.

Lab Notebook: (continued)

- Write only on the right-hand page of the notebook while in the laboratory and for the purpose and procedure sections.
- *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) for help. WebAssign Submission (20 pts). Check WebAssign for due date.
- Exp. #2: Safety Exercise
Identification Based on Percent Metal Composition
Percent KClO_3 in a KCl/KClO_3 Mixture.
Excel Template Submission (40 pts). Due when you next go to Lab.
- Exp. #3 Stoichiometry I. *Excel Template Submission (40 pts). Due when you next go to Lab.*
- Exp. #4 Stoichiometry II. *Excel Template Submission (40 pts). Due when you next go to Lab.*
- Exp. #5 Molecular Weight of a Low Boiling Liquid.
Excel Template Submission (40 pts). Due when you next go to Lab.
- Exp. #6 Titrations. *Print out the Report Form from the Chem. 142 lab web site. Due at the end of the lab period (40 pts).*

QUIZ SECTIONS— Be on time! See page 9 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. **Assignments will be available on Wednesday** and will be due **the following Wednesday morning**. The internet interface is called “WebAssign” and can be found at <http://www.webassign.net>.

WebAssign Login Instructions

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

UW NetID: <input type="text"/>	←	Your UW Net ID (e-mail address without the "@u.washington.edu")
Password: <input type="text"/>	←	Your UW Net ID password

NOTES:

- WebAssign login now uses UW's authentication server (UW Net ID) to obtain access.
- 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 helpful information about how to use WebAssign.
- If you need additional help, see your TA or go to the Chem Study Center (BAG 330).

HELFUL RESOURCES

- > **Instructor:** See instructor office hours on the front page.
- > **Teaching Assistant:**
Your teaching assistant (TA) will advise you 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 through Th from 9:00 a.m. to 6:00 p.m. and Friday from 9:00 a.m. to 2:00 p.m. The study center is staffed with experienced teaching assistants.
- > **Undergraduate Services, Bagley 292:**
The staff can help with scheduling problems.

MIDTERM EXAMS

There are two midterm exams. The dates for these are April 21st and May 19th. Chemistry knowledge is cumulative so questions on exams will often depend on knowledge from earlier chapters.

Exam Rules

1. Bring a number 2 pencil, 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

- One hour exams will be graded and returned in quiz section.
- Keys to exams will be posted on the Chem 142 bulletin board in Bagley Hall and also on the class web site.

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 due to an emergency, the weight of your final exam will be increased proportionately in calculating the course grade.

Examples of an emergency include: illness, death or serious illness in the immediate family, or a car accident on the way to the exam. **Missing the bus, or oversleeping, will not be considered unavoidable, so plan well!**

For an emergency:

1. Report your absence from an hourly examination within 72 hours to Dr. Tracy Harvey in Bagley 292; and,
2. Bring proof of your unavoidable cause (a doctor's note, an accident report, a memorial folder, or similar documentation). The documentation must include a contact name and telephone number; then,
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.

Other kinds of absences, such as observance of regularly scheduled religious obligations or military duty, may be excused; previous notification and documentation must be provided to Dr Harvey.

Absence due to participation in university-sponsored activities such as debating contests or athletic competition also require prior approval. Please bring your letter from the sponsoring group to Dr. Harvey. In this case, the exam may be administered by a proctor provided by the sponsoring group, or the final exam may be increased proportionately, depending on the group.

FINAL EXAM

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.

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.

Clicker Instructions

Clickers are an audience response system that uses similar technology to what you may have seen on TV game shows. During lecture, your instructor poses a multiple choice question within a PowerPoint slide in front of the classroom. Click your reply (just like a T.V. remote) from anywhere in the classroom by selecting a letter or number response on your clicker that corresponds to one of the answer choices on the slide. Your response is sent to a wireless receiver, collected and then sent to the classroom computer. There is a little LED light on the upper left side of your clicker. After you've sent your reply, the light will turn green for a short time to signal that your answer was received and stored.

NOTES:

- *Where to purchase a Clicker:* University Bookstore (~\$35)
- *Clicker ID Code:* Each clicker has a unique 6-digit identification alphanumeric code, located immediately below the bar code on the back of the clicker. Codes usually begin with '00', '01', '02', '03', or '04'. This Clicker ID code is used to match your clicker responses to your name for grading purposes. You will need to enter this code in WebAssign in an assignment called "Clicker Registration". Note that if the code is entered incorrectly or is missing, you will not be able to receive any points toward your clicker score.
- *Lost Clickers:* Remember to bring your clicker to every lecture. If you lose your clicker, you need to buy another one at the bookstore and register the new Clicker ID code. If it's past the WebAssign deadline, send the new Clicker ID code to Bill Cusworth at cusworth@chem.washington.edu.
- *Clicker Response Posting:* Periodically, a list of clicker responses will be posted to the class website so that you can check if your clicker responses are being received. Responses will start counting toward your clicker score after the due date for entering the Clicker ID code in WebAssign.
- *Setting the Frequency Channel:* The clickers come already set to the default frequency channel of 41. If your LED light blinks yellow and then red while answering a question in class, it usually means that you need to reset the frequency channel. Perform these steps:
 1. Press and release the "GO" button.
 2. While the light is flashing red and green, enter "41".
 3. On older units, you will see a green light indicating that the channel has been reset. On newer units, you may have to press "GO" again to get the green light confirmation.
- *Batteries:* Clickers are powered by two coin cell CR2032 (3.0V) Lithium Batteries. Batteries typically last for more than one year. Note that when you obtain a new clicker, you will need to remove the plastic strips from the battery contacts in order for it to work.
- If you need help with your clicker, see Lisa Nordlund in BAG 292 and bring your clicker with you. There is a station set up there to help diagnose problems.

LAB LECTURE AND LAB SCHEDULE

CHEM 142

SPRING QUARTER 2006

WEEK	#	M	T	W	TH	F
3/27	1			LL 1		
4/3	2	Lab #1 Statistical Analysis (dry lab)		LL 2		
4/10	3	Lab #2 - Composition	Lab #2	Lab #2		
4/17	4			LL 3		
4/24	5	Lab #3 - Stoichiometry I	Lab #3	LL 4, Lab #3		
5/1	6	Lab #4 - Stoichiometry II	Lab #4	Lab #4		
5/8	7	LL 5, LQ 1				
5/15	8	Lab #5 - Molar Mass	Lab #5	LL 6, LQ 2, Lab #5		
5/22	9	Lab #6 - Titrations	Lab #6	Lab #6		
5/29	10	Memorial Day Holiday				
6/5	11	FINALS	FINALS	FINALS	FINALS	FINALS

LL = Lab Lecture, LQ = Lab Quiz

QUIZ AND LAB SECTIONS

Section		Day			Time	Location	TA
AA	QZ			Th	830-920	MGH 082A	Mary Snipes
	LB	M			1230-320	BAG 291	mssnipes@u.washington.edu
AB	QZ			Th	930-1020	GLD 436	Ekaterina Badaeva
	LB	M			1230-320	BAG 291	ebadaeva@u.washington.edu
AC	QZ			Th	930-1020	CDH 101	Elizabeth Thompson - lead
	LB	M			330-620	BAG 291	thompsoe@u.washington.edu
AD	QZ			Th	1030-1120	LAW 127	Eric Bott
	LB	M			330-620	BAG 291	bott@u.washington.edu
AE	QZ			Th	1130-1220	SMI 304	Ekaterina Badaeva
	LB		T		1130-220	BAG 291	ebadaeva@u.washington.edu
AF	QZ			Th	1230-120	LAW 118	Mary Snipes
	LB		T		1130-220	BAG 291	mssnipes@u.washington.edu
AG	QZ			Th	230-320	BAG 108	Eric Bott
	LB		T		330-620	BAG 291	bott@u.washington.edu
AH	QZ			Th	330-420	MGH 082A	Elizabeth Thompson - lead
	LB		T		330-620	BAG 291	thompsoe@u.washington.edu

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.