

# CHEMISTRY 142B

## SYLLABUS, POLICIES AND PROCEDURES

WINTER QUARTER, 2006

Lectures: M, W, Th, F — 1:30 - 2:20 p.m. — 131 BAGLEY

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

**Instructor:** Professor William H. Zoller

**E-mail:** [zoller@chem.washington.edu](mailto:zoller@chem.washington.edu)

**Home Page:** <http://faculty.washington.edu/zoller>

**Office:** 303E BAG

**Office Telephone:** 543-1643

**Office Hours:** M W Th F — 2:30 – 3:20 p.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](mailto:nyasulu@chem.washington.edu)

**Head TA:** Beth Thompson

**E-mail:** [thompsoe@u.washington.edu](mailto: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	January 2	<b>Holiday</b>	M	February 6	Chapter 4
W	January 4	Chapter 1	W	February 8	Lab Lecture #5
Th	January 5	Lab Lecture #1	Th	February 9	Chapter 4/5
F	January 6	Chapter 1/2	F	February 10	Chapter 5
M	January 9	Chapter 2	M	February 13	Chapter 5
W	January 11	Chapter 2	W	February 15	Chapter 5
Th	January 12	Chapter 2	Th	February 16	Chapter 5/6
F	January 13	Chapter 2	F	February 17	Chapter 5/6
M	January 16	<b>Holiday</b>	M	February 20	<b>Holiday</b>
W	January 18	Lab Lecture #2	W	February 22	Lab Lecture #6
Th	January 19	Chapter 2/3	Th	February 23	Chapter 6
F	January 20	Chapter 3	F	February 24	<b>Exam #2</b>
M	January 23	Chapter 3	M	February 27	Chapter 6/7
W	January 25	Lab Lecture #3	W	March 1	Chapter 7
Th	January 26	Chapter 21	Th	March 2	Chapter 7
F	January 27	<b>Exam #1</b>	F	March 3	Chapter 7/8
M	January 30	Chapter 21/4	M	March 6	Chapter 8
W	February 1	Lab Lecture #4	W	March 8	Chapter 8
Th	February 2	Chapter 4	Th	March 9	Chapter 8
F	February 3	Chapter 4	F	March 10	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, Winter 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 Copy Center in Odegaard Library (required).
- ❑ 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 **Tuesday quiz section every week**. You should take the practice quiz on Professor Zoller's web page each week before the Tuesday 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.

<b><i>GRADING</i></b>	Bonus Points	10
	In class Clicker Questions (10 pts/week, 9 weeks)	90
	2 midterm exams (1 hr. each, 100 pts. each)	200
	Quizzes (10, 10 points each)	100
	Homework (10, 10 points each)	100
	Laboratory	390
	<u>Final exam (2 hr.)</u>	<u>200</u>
	TOTAL	1090

**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) Winter Quarter 2006, (iii) the course number, Chem. 142B.
- 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  $\text{KClO}_3$  in a  $\text{KCl}/\text{KClO}_3$  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>.

How to access WebAssign:

1. Go to [www.webassign.net/student.html](http://www.webassign.net/student.html)
2. The login page has 3 fields to be filled in:

**Username:**

Simply your UW NetID - most likely your email address without the extension "@u.washington.edu"

**Institution:**

"washington"

**Password:**

Initially set to your student number without the leading zeroes. For example, "06950959" would be entered as "6950959".

**NOTES:**

- To use WebAssign, you need an internet connection with "cookies" and "Java" enabled.
- Once you log in, you should change your initial password.
- Each student must purchase an access code 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 Chemistry Study Center (BAG 330).

***HELPFUL 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 January 27<sup>th</sup> and March 3<sup>rd</sup>. 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.

**LAB LECTURE AND LAB SCHEDULE**

WEEK	#	M	T	W	TH	F
1/1	1				LL 1	
1/8	2	Lab #1 Statistical Analysis (dry lab)				
1/15	3	Martin Luther King Holiday		LL 2		
1/22	4	Lab #2 - Composition	Lab #2	LL 3 , Lab #2	Lab #2	
1/29	5	Lab #3 - Stoichiometry	Lab #3	LL 4, LQ 1 , Lab #3	Lab #3	
2/5	6	Lab #4 - Stoichiometry II	Lab #4	LL 5, LQ 2 , Lab #4	Lab #4	
2/12	7	Lab #5 - Molar Mass	Lab #5	Lab #5	Lab #5	
2/19	8	President's Day Holiday		LL 6, LQ 3		
2/26	9	Lab #6 - Titrations	Lab #6	Lab #6	Lab #6	
3/5	10					
3/12	11	FINALS	FINALS	FINALS	FINAL S	FINAL S

**LL = Lab Lecture, LQ = Lab Quiz**



**QUIZ AND LAB SECTIONS**

Section		Day			Time	Location	TA
BA	QZ	T			230-320	FTR 106	Ekaterina Badaeva
	LB		W		930-1220	BAG 291	ebadaeva@u.washington.edu
BB	QZ	T			130-220	MEB 250	Elizabeth Thompson (lead)
	LB		W		930-1220	BAG 291	thompsoe@u.washington.edu
BC	QZ	T			1130-1220	JHN 026	Jennifer Gadd
	LB		W		230-520	BAG 291	gaddj@u.washington.edu
BD	QZ	T			1230-120	LAW 117	Kristian Swearingen
	LB		W		230-520	BAG 291	keschem@u.washington.edu
BE	QZ	T			130-220	MEB 235	Dan Rainey
	LB			TH	930-1220	BAG 233	drhr@u.washington.edu
BF	QZ	T			230-320	LAW 116	Christopher Siegler
	LB			TH	930-1220	BAG 233	csiegler@u.washington.edu
BG	QZ	T			1130-1220	CLK 119	Jason Farmer
	LB			TH	930-1220	BAG 291	farmerj@u.washington.edu
BH	QZ	T			1230-120	RAI 121	Jennifer Gadd
	LB			TH	930-1220	BAG 291	gaddj@u.washington.edu
BI	QZ	T			1230-120	THO 125	Jason Farmer
	LB			TH	230-520	BAG 233	farmerj@u.washington.edu
BJ	QZ	T			330-420	PAR 206	Christopher Siegler
	LB			TH	230-520	BAG 233	csiegler@u.washington.edu
BK	QZ	T			230-320	LOW 118	Kristian Swearingen
	LB			TH	230-520	BAG 291	keschem@u.washington.edu
BL	QZ	T			330-420	MOR 226	Elizabeth Thompson (lead)
	LB			TH	230-520	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.