

Syllabus Chemistry 1442 Spring 2008

Instructors:

Dr. Jimmy R. Rogers
Office hours: Mon-Thurs, 2-4 PM
104 Baker Chemistry Research Building
817-272-5442
jimrogers@uta.edu
www.uta.edu/faculty/jimrogers

Dr. Seiichiro Tanizaki
Office hours: Mon/Wed/Fri 1-3 PM
102 Baker Chemistry Research Building
817-272-1056
tanizaki@uta.edu

Dr. Zoltan Schelly
Please see the 1442-002 Syllabus at
<http://www2.uta.edu/schelly/>
356 Chemistry & Physics Building
817-272-3803
schelly@uta.edu

Required Materials: *Principles of General Chemistry*, by Silberberg
WebAssign Access (available at the UTA Bookstore and from www.webassign.net)

Course Prerequisite: CHEM 1441 is the prerequisite for this course. If you do not have credit for CHEM 1441, you should not be in this course. Also, in order to receive credit for this course, you must also be enrolled in a Chemistry 1442 lab.

Tentative Schedule: The following represents a tentative schedule of lecture and examination material for this semester. *The exact dates of the four major exams will be announced in class.* Note that the Comprehensive Departmental Final Exam is scheduled for Wednesday, May 7, at 5:30 PM.

Week of:	Lecture Material
January 14-18 <i>January 21</i>	Chapter 12, "Intermolecular Forces: Liquids, Solids, and Phase Changes." <i>Martin Luther King, Jr. Day Holiday. Classes do not meet.</i>
January 22-25 Jan. 28 – Feb. 1	Chapter 13, "Properties of Solutions." Finish Chapter 13.
February 4-8 February 11-15 February 18-22	Exam 1 on Chapters 12 and 13. Begin Chapter 16, "Kinetics: Rates and Mechanisms of Chemical Reactions." Finish Chapter 16. Begin Chapter 17, "Equilibrium: The Extent of Chemical Reactions." Finish Chapter 17.
February 25-29 March 3-7 March 10-14 <i>March 17-21</i>	Exam 2 on Chapters 16 and 17. Begin Chapter 18, "Acid-Base Equilibria." Finish Chapter 18. Begin Chapter 19, "Ionic Equilibria in Aqueous Systems." Finish Chapter 19. <i>Spring Break. Classes do not meet.</i>
March 24-28 <i>March 28</i>	Exam 3 on Chapters 18 and 19. Begin Chapter 20, "Thermodynamics: Entropy, Free Energy, and the Direction of Chemical Reactions." <i>Last day to drop a class. Please review UTA's Drop Policy below.</i>
Mar. 31 – Apr. 4 April 7-11 April 14-18	Finish Chapter 20. Sections 4.5-4.6, "Oxidation Reduction Reactions." Begin Chapter 21, "Electrochemistry: Chemical Change and Electrical Work." Finish Chapter 21.
April 21-25 April 28 – May 2 May 7	Exam 4 on Chapters 20, 21, and 4.5-4.6. Begin Chapter 23, "Nuclear Reactions and Their Applications." Finish Chapter 23. Comprehensive Departmental Final Examination , 5:30-8:00 PM. Room locations for the final exam will be announced in class shortly before the end of the semester.

Dropping the Course:

New Drop Policy: As a result of recent legislation passed by the Texas Legislature, any student who enrolls in a public institution of higher education as a first-time freshman in Fall 2007 or later will be limited to six dropped courses during the course of their academic career. This applies to UTA course work and course work completed at other Texas public institutions.

In addition, a student can only attempt the same course two times. On the third attempt, the student will be charged the equivalent of out-of-state tuition for the course.

If you need to drop the course, please see your major advisor. If you are an undeclared major and you need to drop the course, please see an advisor at the University Advising Center on the second floor of Davis Hall.

Paperwork: When dropping the course, *you* are responsible for seeing that all of the proper paperwork is completed and submitted to the appropriate university officials. If this paperwork is not completed, you will receive a letter grade corresponding to your earned grade, including zeros for all missed work.

If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's Office. You will not be allowed to continue attending class until your Enrollment Loan has been applied to any outstanding tuition or fees.

Grading:	Lab Average	25%	
	Homework/Quiz/Class Participation	10%	
	4 one-hour exams		40%
	Comprehensive Final	25%	Wednesday, May 7, 5:30-8:00 PM

Four one-hour exams will be given. These exams will cover the reading, lecture material, and assigned problems. The final exam will be comprehensive and will be given on Wednesday, May 7. Grades will be assigned according to the following scale:

<u>Total Numerical Grade</u>	<u>Letter Grade</u>
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

No make-up exams will be given, and any missed exams will result in a grade of zero. However, the final exam score will replace the lowest one-hour exam score if it is to the student's benefit.

If you drop or fail Chemistry 1442, grades earned in the lab cannot be carried over when you repeat Chemistry 1442.

Homework: Web-based homework problems will be assigned. More information will be given in a class handout.

Class Communication: E-mail is the prime means for communication. Therefore, the University has the right to send communications to students via e-mail and the right to expect that those communications will be received and read in a timely fashion. The Office of Information Technology (OIT) will assign all students an official University e-mail address. It is to this official address that the University will send e-mail communications. Students are expected to check their official e-mail account on a frequent and consistent basis to stay current with University communications. The University recommends checking e-mail daily, in recognition that certain communications may be time-critical.

Examination Needs: You must bring the following to each examination:

Scientific Calculator (You may not use a graphing calculator or a calculator capable of storing alpha-numeric/textual material.)

No. 2 pencils with eraser

NCS Answer Sheet 4521 (available at the UTA Bookstore) (or, an answer form specified by your instructor)

UTA Student ID Card

Students are not allowed to have access to cell phones or digital pagers during any exam.

Cell Phones: Please silence all cell phones prior to class.

Grade Replacement Policy and Taking the Course Pass/Fail

Students enrolling in this course with the intention of replacing a previous grade earned in the same course must declare their intention to do so with the registrar *no later than Census Date* (January 30, 2008). Please consult the Undergraduate Catalog (pages 30-31 in the 2007-2008 edition) for the university policy regarding grade replacement.

If P or F is a grade option in this class and you intend to take this class for a pass/fail grade instead of a letter grade, you *must* inform the instructor, through the necessary paperwork, of your intentions *before* the census date (January 30, 2008). Please consult the Undergraduate Catalog (page 31 in 2007-2008 edition) for the university policy regarding taking a course pass/fail.

Course Goals: Upon completing the course, the student should be able to

- 1) predict the properties of solutions;
- 2) understand chemical kinetics and their relationship to reaction mechanisms, and be able to perform calculations related to the rates of chemical reactions;
- 3) understand chemical equilibrium and its application to gas phase equilibria, heterogeneous equilibria, acid-base equilibria, and solubility and complex ion equilibria;
- 4) use the concepts of thermodynamics to predict the spontaneity of processes, as well as the changes in free energy, entropy, and enthalpy;
- 5) understand the basic concepts of electrochemistry and be able to use standard reduction potentials to calculate quantities involved in an electrochemical reaction;
- 6) relate the physical and chemical properties of metals to their electronic structure and to band theory;
- 7) understand nuclear chemistry, including calculations involving the rates of radioactive decay and binding energies of nucleons.

Chemistry Assistance:

Supplemental Instruction: UTA students will receive special, free instruction this semester in selected sections of traditionally difficult courses in accounting, biology, chemistry, history and physics as part of a program sponsored by the Provost's office and Students Obtaining Academic Readiness (SOAR). The program, Supplemental Instruction (SI), consists of regularly scheduled

study sessions to help students with course content, study skills, and exam preparation. All Chemistry 1442 students are encouraged to participate.

Chemistry Clinic: The Chemistry Clinic, located in Room 219 Science Hall, will be staffed with tutors available to answer your questions related to lecture and homework. Hours of the Chemistry Clinic will be announced in class. This service is free for students enrolled in Chemistry 1441 and 1442.

Exam Reviews: Exam reviews will be given prior to each exam. The times and locations of these reviews will be announced in class. Prior to attending Mr. Powell's test reviews, please download and print his practice test from his website: <http://dipowell1.home.mindspring.com>.

Science Education and Career Center: The Science Education and Career Center, located in Room 105 of the Life Science Building, provides a variety of materials, including old exams, for assisting Chemistry students.

SOAR Cost Share Tutoring: SOAR (Students Obtaining Academic Readiness) is located in 132 Hammond Hall and offers free academic support for qualifying students and low-cost services for all students, including Cost Share Tutoring.

Strategies for Succeeding in Chemistry 1442:

1. Attend *every* lecture. A very strong correlation exists between attendance and success in Chemistry 1442. Because the topics covered in this course build on each other, missing even one class can mean the difference between success and failure in the course.
2. Prior to class, read the chapter which will be covered in lecture.
3. Review your lecture notes after each class. Correct obvious errors and note topics which require further study or clarification.
4. Work all of the suggested homework problems. Do not look in the solutions manual until you have given your best effort to solve the problem on your own.
5. Use practice tests available from the Science Education and Career Center.
6. Spend the necessary amount of time studying chemistry. The rule of thumb for succeeding in Chemistry is three hours of study for every hour of lecture. This means that at a minimum you should plan to study Chemistry nine hours each week.
7. Don't procrastinate. These concepts take time to sink in, and you may have to practice these exercises over a period of many days in order master the necessary skills.
8. Form a study group. This is your first avenue for getting help. Be able to communicate with each other on short notice, not just before class.

Academic Dishonesty:

All students are expected to pursue their scholastic careers with honesty and integrity, and the Department of Chemistry and Biochemistry will not tolerate academic dishonesty in any form. "Scholastic dishonesty includes but is not limited to cheating, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, subsection 3.2, Subdivision 3.22)

Examples of academic dishonesty includes:

- exchanging answers or information during a test or quiz
- looking at another student's paper during a test or quiz
- bringing notes in any form into the test or quiz, including written notes (crib sheets), digitally stored information (including formulas, constants, alpha-numeric material or text), or notes stored in any other medium
- looking at a book or other source during the quiz or test

During tests or quizzes, students are not allowed to use any hand-held calculators or computers which possess the capability of storing alpha-numeric or textual material. If the instructor allows the use of calculators on a particular test, then students may only use scientific calculators which are non-programmable. In addition, students are not allowed to have access to cell phones or digital pagers during any test or quiz. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

Americans with Disabilities Act

The University of Texas at Arlington is committed to the spirit and letter of federal equal opportunity legislation. The Americans with Disabilities Act (ADA) provides those with disabilities with the same opportunities as all citizens.

If you require an accommodation based on disability, I would be happy to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated.

Bomb Threats:

In the event of a bomb threat to a specific facility, University Police will evaluate the threat. If required, exams may be moved to an alternate location, but **exams will not be postponed**. UT-Arlington will prosecute those phoning in bomb threats to the fullest extent of the law.