

CHEM 110 Fall 2003  
Sections 1 and 2  
TENTATIVE LECTURE SCHEDULE

Faraday 143

12:30-13:45 Tu, Th - Section 1

18:00-19:15 Mo, We - Section 2

(The two sections will be essentially identical. However, students must attend the section for which they registered.)

INSTRUCTOR: Dr. Petr Vanýsek; Office, Faraday West 418

DATE (Monday of the week)	TOPIC	CHAPTER
25.8.03	What Is Chemistry? The Numerical Side of Chemistry	1-2
	The Numerical Side of Chemistry	2
1.9.03	The Evolution of Atomic Theory.	3
	The Modern Model of the Atom.	4
8.9.03	Bonding Between Atoms.	5
	The Structure of Molecules.6	
15.9.03	Test I***	
	The Structure of Molecules.	6
22.9.03	Chemical Reactions.	7
	Chemical Reactions	7
29.9.03	Stoichiometry	
	Stoichiometry	8
6.10.03	The Transfer of Electrons in a Chemical Reaction.	9
	The Transfer of Electrons in a Chemical Reaction.	9
13.10.03	Test II***	
	Phases of Matter.	10
20.10.03	Phases of Matter.	
	Solutions.	12**
27.10.03	Solutions.	12**
	When Reactants Turn Into Products.	13
3.11.03	When Reactants Turn Into Products.	13
	Chemical Equilibrium	14
10.11.03	Test III***	
	Chemical Equilibrium	14
17.11.03	Electrolytes, Acids, and Bases.	15
	Electrolytes, Acids, and Bases.	15
24.11.03	Nuclear Chemistry.	16
27.11.03	THANKSGIVING	
1.12.03	Chemistry in our lives (current topics)	
	Course review	all

\*\* Chapter 11 is skipped

\*\*\*The questions on the written examinations will differ for the two sections.

Note on CHEM 111: You may be taking concurrently CHEM111, the laboratory to accompany CHEM110. The instructor responsible for the laboratories is Dr. D. Ballantine, Jr., Faraday West 424. The lab (CHEM111) and class (CHEM110) grades are independent.

TEXT: Steve Russo and Michael E. Silver, Introductory Chemistry, 2nd edition, ISBN: 0-321-04634-X Publisher: Benjamin Cummings Copyright: 2002

PREREQUISITS: None on the college level. Working knowledge of algebra and math in general is required. Note that previous chemistry is not required for this course.

*Course withdrawal:* The last day to withdraw is September 19, 2003. There will be one test given prior to this date so you will know the results before the drop date.

Schedule of tests/quizzes:

**Section I (Tuesday/Thursday)**

- 26.8. Background quiz (not included in grading)
- 16.9 Test I
- (19.9. Last day to withdraw)
- 30.9. Quiz I
- 14.10. Test II
- 28.10 Quiz II
- 11.11. Test III
- 25.11. Quiz III

**Section II (Monday/Wednesday)**

- 25.8. Background quiz (not included in grading)
- 15.9 Test I
- (19.9. Last day to withdraw)
- 29.9. Quiz I
- 13.10. Test II
- 27.10 Quiz II
- 10.11. Test III
- 24.11. Quiz III

OFFICE HOURS: 8:00-9:00 Tuesday, 16:00-17:00 Wednesday, Faraday West 418. Other times by appointment. I will help you with your problems, but come to see me with questions and problems already at least partially prepared. Do not expect the instructor to give you your own private make-up class. When coming to the office hours, be prepared to share the office or the time with other students.

*Required calculator:* There is a required calculator for this course, Texas Instruments TI-30Xa. If you plan to use a calculator during tests or quizzes, than it is the only one allowed. If we perform calculations in class or during practice, all will be explain using this calculator. [Shop around. Wal-Mart has one for \$18 (on August 15 the price was \$ 9.88) and Target sells the same for \$ 9.86 and Office

Depot has them for \$ 9.99] *Rationale:* (1) Modern technology allows storing lot of data in small devices and some of the calculator-like device can communicate with the outside world. Access to unapproved material or communication with others during a test or a quiz is cheating. To prevent this and assure that all students have identical opportunity a single calculator without such capabilities is permitted. (2) If you need help with your calculator (rather than the calculation), I can help you only if I am familiar with your calculator. Thus, to be able to help everybody, I will learn the detailed operation of this one.

Note: Make sure you get the TI-30Xa model and not some similarly sounding one. For example TI-30X IIS and TI-30X IIB (both with a two line display) are not acceptable. The IT-30Xa exists also in a solar powered version and in the eco (ecological friendly) version. Any of the three versions is acceptable. Write your name on the back of the calculator so that you can identify it. There will be over 155 identical in the class.

Have a calculator and a pad for calculations ready for each class period. The lecture will be always interspersed with your active participation. For tests it is assumed that everybody has the specified calculator, pencil No. 2 (for computer grading forms), a pen for essay answers (only answers written in permanent ink can be reconsidered if you suspect an error in grading of an essay question or expect reconsideration for partial credit), and adequate knowledge to answer correctly the questions.

The course relies on active knowledge of mathematical calculations and the ability to setup algebraic equations. Helpful for those insecure in mathematics are the following books: Miller, Lial, Schneider; Fundamentals of college algebra (MATH 110 book, or similar); Dorothy M. Goldish: Beginning mathematics for beginning chemistry, 4th Ed., Macmillan, New York, 1990. Walter J. Gleason: Is your math ready for chemistry?, W. C. Brown Publishers, Dubuque 1993.

#### EXAMS AND GRADING:

Hour tests (3) worth each 100 points. Quizzes (3) worth each 40 points. The sum of the quizzes, if higher than the worst test, will be used. Tests: 60% (300 points)

*Note that replacing the score of the worst test by the quiz score is your insurance against missing a test. There will be no make-up for a test or a quiz for any reason.*

Comprehensive final test 40% (200 points) [TOTAL 100% = 500 points]

Finals: Section 1 (12:30 class) - Tuesday, December 9, 12:00-13:50

Section 2 (18:00 class) -Monday, December 8, 18-19:50

NOTE THAT TAKING THE FINAL TEST IS REQUIRED.

Your class percentage will be calculated as the sum of all the points earned (with the test/quiz replacement rule), divided by 5. The grades will be as follows (NIU catalog):

A Outstanding competence 90% and more

B Above satisfactory competence 80% to 89.99%

C Satisfactory level of competence 70% to 79.99%

D Marginally satisfactory competence 60% to 69.99%

F Unsatisfactory level of competence < 60%

*Note on mathematical background:*

This course of introductory chemistry is replete with mathematical problems, known as "word problems." In those, one has to figure out first what needs to be calculated and then do the actual calculation, usually not hard with a calculator. However, setting up the problems may be challenging for some.

Take as an example the following problem: Seven lemons sell for three dollars. How much will it cost to buy twelve lemons? This is a simple ratio calculation and the answer should be \$ 5.14. You should try, right now, to do the math. If you are not comfortable with doing this problem, whether with a calculator or on a piece of paper, and do not know immediately how to set up the numbers to get the answer, then, you will have a major problem in this class. Do not take it; enroll instead in a math skills refresher course.

For the tests and quizzes we use the scanning forms. Only one answer is correct and the points are received for correctly marked oval. I do not use the "right minus wrong" scheme. However, you can mark only one oval – question marked more than once is discounted. Use the usual pencil (Pencil No. 2) to fill in ovals. From experience I know that some (black) ballpoint pens work, so does a felt pen. But, you cannot erase those and the Testing Services do not approve of this method. Be sure that you fill in your last name (and fill in the corresponding ovals) and include your initials. If you have just one initial, leave the second field blank. If you change your name during the semester it may be more practical to keep using your old name/initials.

The block for the ID NUMBER has 9 spaces and it was originally intended for the social security number. The university can no longer use the number officially for identification. Recommended is the "Z" number, issued to you as a computer logon. It starts with the letter Z and is followed by 6 numbers, e.g., Z032673. This is the number by which I can find you in the class roster. Omit the Z and write the six numbers as your student ID starting with the leftmost column. It will leave three empty spaces at the end. Note that many of the numbers begin with "0" That is a valid number and you should include it. If you do not want to use the Z number, do not have it or do not know what it is, you may still use the social security number since most of you remember it, or you can use other number as well. Whatever number you use the first time, you should use it throughout the semester even if you made the first time a mistake in it. Two different numbers will make you appear as two different persons. I catch it for the final grade, but it is always a hassle.

To obtain the "Z" number you can call 752-7738.

In the **MISC** field mark the FORM according to the form letter on your test (I give usually several versions). You do not need to mark your section number.

**ACADEMIC DISHONESTY:**

In general, cheating means presenting or using work that was not done entirely by you and, in the case of in-class examination, it includes also presenting or using your work that was written outside the classroom. You may

not talk or pass notes to each other on any subject. Having other materials than those allowed for the work with you within reach during test or sharing calculators is cheating as well. Keep what you may need for the test within reach, and keep what you should not have with you in your closed packs. Better yet, do not bring it with you.

During tests you must put away any devices that would allow you to communicate with others or access databases. You are allowed to use the specified calculator. Any other type has to be put away. Any such use during graded in-class work will result in zero on your work. I cannot investigate the nature of your outside contact.

The minimum consequence of documented dishonesty is an "F" in the course. Other, more severe sanctions may include suspension or expulsion from the university.

#### OTHER ISSUES:

No smoking in the building, no food or drink in the classroom.

**ATTENDANCE:** Attendance at the lectures is not monitored and for that matter, it is not mandated, but it is in your best interest to be there. Consider the following: (1) The tests are based on the textbook material covered in the class as well as the class material, which may not be in the textbook, (2) Office hour cannot be used to catch up on material missed by a class absence. **LATE ARRIVAL TO CLASS** is discouraged. It disrupts the other students and the instructor and if repeated, may be basis for barring from the class. If you absolutely must arrive late, enter quietly from the back and sit in the back. Only the persons enrolled in that class and section can attend the lecture.

**NOTE ON CELL PHONES AND THE LIKE:** Cell phones are great technology and it is great to have one with you for emergency. (Campus police: 815-753-1212, you may program this on you phone, as 911 could take you to the state troopers). However, please, turn off your phones and other noise-making devices as a courtesy to others, and do not distract yourself by reading and sending text messages. You must turn cell phones and any other communication devices off and put them away during tests and quizzes.

#### *Chemistry tutor schedule:*

There are tutors available every day in Faraday Hall - Room 246. The schedule was not available at the time of this printing. Watch bulletin boards or the updated syllabus on the web:

<http://www.chembio.niu.edu/electrochem/CHEM110F03.html>