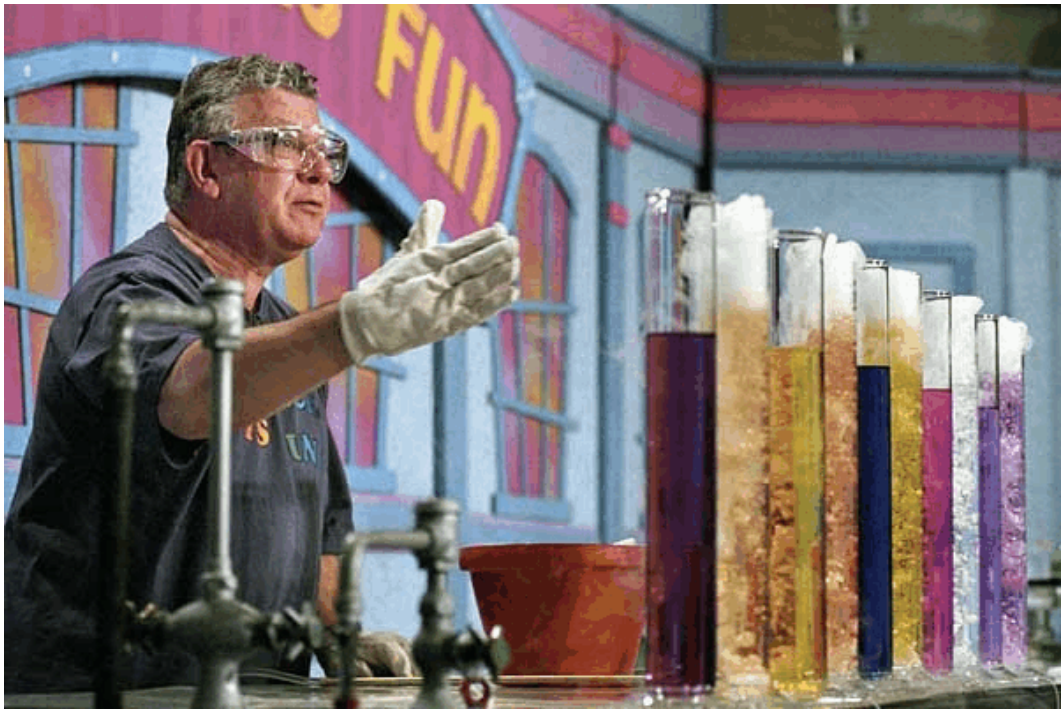
January - May 2007

CHEMISTRY 104

Lecture Section 2
MWF 11:00 A.M. Room 1351 Chemistry
www.scifun.org

1970-2007

General Chemistry:	5 credit hours
Lecturer:	Professor Bassam Z. Shakhashiri
Office:	9355 Chemistry
Telephone:	262-0538
E-Mail:	bassam@chem.wisc.edu
	(Please include your lab section number and your T.A.'s name in your messages to me. You must use your *@wisc.edu* mailbox. Otherwise I will not respond.)
Office Hours:	Mondays 12:05 - 1:15 p.m. Also, by appointment.
	Students are encouraged to see me immediately after class near the lecture table.



You should obtain a copy of each handout when it is distributed in lecture or from your T.A. Copies of handouts are also available in the General Chemistry Study Room (1371).

ALWAYS BRING THIS SYLLABUS TO CLASS

CONTENTS

INTRODUCTION

Chemistry 104 is the second course in a two-semester General Chemistry sequence. The first course is Chemistry 103. Chemistry 103 and 104 are a unit, and students who take Chemistry 104 are presumed to have completed Chemistry 103 (or its equivalent).

> **NOTE: If your grade in Chemistry 103 was below C or if you did not take Chemistry 103 at UW-Madison in the fall of 2006, you should review the material the Chemistry 103 fall 2005 syllabus on my Web site as soon as possible to bring your level of competence up to the "acceptable" range. All such students should complete Lessons 5, 6, 9, 10, 12–15 and 37 in the *Workbook for General Chemistry* (see below) within the first two weeks of classes.**

Chemistry 103 and 104 provide a general background in the factual basis and principles of chemistry. The 103-104 sequence is a prerequisite for advanced courses such as Organic Chemistry (341 or 343) and Analytical Chemistry (327 or 329). These General Chemistry courses explore chemical phenomena and principles with emphasis on developing an understanding of chemistry and an appreciation of what chemists do. You must commit yourself to learning the basic vocabulary of chemistry. You will acquire skills in dealing with chemical phenomena and principles and in manipulating mathematical expressions that describe chemical behavior.

I am especially interested in having you develop an informed and sensible attitude toward chemistry in particular and science in general. In addition, I would like you to develop good study habits and skills so that you can fulfill your intellectual and emotional capabilities. Your T.A. and I need to be informed about what is good, bad, and indifferent about what we do.

CONNECTIONS

In this chemistry course we will encounter and use a robust vocabulary. Several of the words begin with the letter "C" and one of the most significant is: CONNECTIONS. It is important that you strive to make connections among all aspects of the course material: facts, principles, theories, explanations, etc. in order to increase your knowledge and to deepen your understanding of the simple and complex relationships that make chemistry *the* central science.

Often the connections are easy to make, especially if you seek to make them and if you seek help in making them. Mental connections are not always obvious and making them is greatly enhanced by one's eagerness, patience, determination, perseverance, and general emotional readiness to learn. The great joy of making discoveries comes from being focused and from being willing to learn from mistakes without succumbing to frustration.

It is important that you try to make connections, as appropriate, with other course material that you may have had or with what you are learning this semester in your other courses.

In addition, it is very important that you make connections with people and places. Personal connections with fellow students, teachers, experts, advisors, and others in our community will greatly enhance your academic progress and personal maturity. Furthermore, your emotional growth and development will greatly benefit from pursuing the rich offerings available in our community.

TEXTBOOKS AND OTHER MATERIAL (Required)

1. *Chemistry & Chemical Reactivity*, 6th edition, John C. Kotz, Paul M. Treichel, Jr., and Gabriela C. Weaver, Thomson Brooks/Cole, 2006. (TEXT)
2. *Chemical Equilibrium*, 3rd edition, Bassam Z. Shakhashiri and Rodney Schreiner, Stipes Publishing Co., 2005. (EQUIL)
3. *Chemical Kinetics*, 2nd edition, Bassam Z. Shakhashiri and Rodney Schreiner, Stipes Publishing Co., 2004. (KIN)
4. *Workbook for General Chemistry* , 3rd edition, Bassam Z. Shakhashiri and Rodney Schreiner, Stipes Publishing Co., 2004. (WKBK)
5. *Chemistry 103/104 Laboratory Manual, Fall 2006* or *Chemistry 104 Laboratory Manual, Fall 2006*, Department of Chemistry, University of Wisconsin-Madison.
6. Laboratory Research Pad, carbonless notebook.
7. Safety glasses/goggles. Industrial quality eye protection is *required* in all chemistry laboratories. Safety goggles that fit over regular glasses can be purchased from local bookstores and drugstores.
8. An inexpensive calculator is required. It should have capabilities for square roots, logarithms and inverse logarithms and exponential (scientific) notation operations. The calculator will be used on exams, quizzes, homework assignments and in the laboratory.

COURSE FORMAT

LECTURES. During **Monday/Wednesday** lectures we will discuss principles, outline goals, and present illustrations and demonstrations.

- To prepare for lecture, you should read the suggested readings in the Course Outline starting on page 10 of this syllabus.
- During lecture, take your own thorough notes. Be sure to take effective notes about the demonstrations; the Guidelines for Demonstration Notes on page 9 should help you do this.
- After lecture you should review your notes and study the appropriate readings and work the suggested exercises.
- See page 7 for Helpful Study Hints. (The answers to many of the exercises are provided in the book.)
- In addition, I will suggest exercises in lecture.

The **Friday lectures** are designated for enrichment. Enrichment lectures will be given by prominent outside speakers who will further illuminate your knowledge of science and can also inspire career options. Questions about the content of these lectures will be included on examinations.

DISCUSSION SECTION. A group of 22 or fewer students constitutes a discussion and laboratory section supervised by one Teaching Assistant. Discussion sections are for review and problem solving relevant to the recent lecture material. The sessions include short quizzes to help evaluate your progress. You should be prepared when you come to the discussion class. Ask specific questions of your T.A. Make sure you understand the questions and the answers given by your T.A. and fellow students.

LABORATORY. In laboratory you will have the opportunity to experience directly some of the relationships discussed in lectures and in the textbook and to apply experimental techniques to solving chemical problems. Laboratory work is, by nature, slow compared with text reading. You will succeed only with adequate preparation. You must read the experiment and complete the pre-lab assignment **prior** to coming to lab. We encourage you to discuss your work with your fellow students and T.A. while doing the experiment.

DISCUSSION AND LABORATORY TIMETABLE

721	12:05 TR	2381 Chem	7:45-10:45 W	1335	Bhavesh Gandhi	721
722	1:20 TR	2381 Chem	7:45-10:45 F	1335	Bhavesh Gandhi	722
723	3:30 TR	B355 Chem	7:45-10:45 W	1335	Patrick McElfresh	723
724	4:35 TR	B355 Chem	7:45-10:45 F	1335	Patrick McElfresh	724
725	11:00 TR	2377 Chem	7:45-10:45 T	1335	William Welch	725
726	12:05 TR	2377 Chem	7:45-10:45 R	1335	William Welch	726
727	2:25 TR	B387 Chem	7:45-10:45 T	1335	Jeremiah Erickson	727
728	3:30 TR	B387 Chem	7:45-10:45 R	1335	Jeremiah Erickson	728
729	7:45 TR	2307 Chem	11:00-2:00 T	1335	Shu Yao	729
730	8:50 TR	2307 Chem	11:00-2:00 R	1335	Shu Yao	730
731	8:50 TR	B21 Chadbourne	11:00-2:00 T	1335	Thomas Preston	731
732	9:55 TR	49 Sellery Hall	11:00-2:00 R	1335	Thomas Preston	732
733	11:00 TR	B357 Chem	2:25-5:25 M	1335	Tyler Graf	733
734	12:05 TR	B357 Chem	2:25-5:25 W	1335	Tyler Graf	734
735	3:30 TR	10 Ogg Hall	2:25-5:25 M	1335	Lena Yurs	735
736	4:35 TR	138 Witte Hall	2:25-5:25 W	1335	Lena Yurs	736

E-Mail Addresses for TAs:

Bhavesh Gandhi	*gandhi@chem.wisc.edu*	Shu Yao	*syao@chem.wisc.edu*
Patrick McElfresh	*mcelfres@chem.wisc.edu*	Thomas Preston	*tpreston@chem.wisc.edu*
William Welch	*wwelch@wisc.edu*	Tyler Graf	*tgraf@chem.wisc.edu*
Jeremiah Erickson	*jerickson@chem.wisc.edu*	Lena Yurs	*lyurs@chem.wisc.edu*

ACADEMIC PERFORMANCE, PROGRESS, AND ACCOMPLISHMENT

In this large course, the students have diverse backgrounds and different expectations. My expectations include individual accomplishment on the part of every student, so that all of you not only fulfill your capabilities, but also expand your capacity and enrich your life. Of great importance to me are the knowledge you acquire, the skills you cultivate, and the attitude you develop. I expect that by the end of the semester each of you will have enough accomplishment to be at least at the ACCEPTABLE level (see below). Everything the instructional staff does is aimed toward helping you achieve this goal.

To help you gauge your academic performance and progress I am offering you a collection of learning aids. For example, CHEM TIPS (see page 6) will enable you to discover in a timely manner those segments of the course that require more study on your part. Also, information from CHEM TIPS will help me and your Teaching Assistant in planning lecture and discussion sessions. Another learning aid you should take advantage of are the self-paced *WORKBOOK FOR GENERAL CHEMISTRY* (see page 6). The self-paced approach helps you ascertain your own knowledge and level of understanding of chemistry.

Although grades are not the ultimate measure of your knowledge, abilities, or potential, they are useful guides to you and to others. Your level of accomplishment will be recognized at the end of the semester by the letter grade you receive for the course. Individual accomplishment is measured against course standards and not necessarily against the performance of other students. The course standards and levels of accomplishment are:

Percent	Accomplishment Level	Letter Grade
90 - 100	Superior	A
88 - 89	Excellent	AB
80 - 87	Proficient	B
78 - 79	Good	BC
70 - 77	Acceptable	C
60 - 69	Mediocre	D
below 60	Unacceptable	F

ACADEMIC MISCONDUCT AND CHEATING. In this course you are encouraged to study and prepare for quizzes and examinations with other students. However, when taking quizzes and examinations, and when writing laboratory reports, you are to work alone. The University regulations are very explicit about academic misconduct and cheating, and these regulations will be fully enforced. During examinations, quizzes and lab reports we will apply a code of honor, under which you are to work alone and neither give nor receive help from any sources. Also, you are expected to help enforce this code.

GRADES. Your grades will be based as follows:

readiness assessment	4 percent
3 examinations	33 percent
quizzes	15 percent
laboratory	12 percent
summary (final) examination	36 percent

Lab grades will be normalized to a common scale at the end of the semester to minimize differences in grading practices in lab sections. Cumulative course grades may be scaled at the end of the semester, guided by the scale shown above and by class accomplishment.

The laboratory work is important to understanding and appreciating chemistry. **You must successfully complete the laboratory assignments in order to receive a passing grade in the course.** Exams may include questions based on the laboratory material.

READINESS ASSESSMENT. To assure your readiness to learn in Chemistry 104, I have designed a set of multiple choice questions, called the Readiness Assessment, that deals with necessary background material from Chemistry 103. You will be asked to answer these questions between 11:00 and 11:50 a.m. on Friday, January 26. Your responses will be graded and are worth 4% of the semester grade. The best way to prepare for the Readiness Assessment is to review the material listed in the Note on page 2. It is my expectation that every student performance on the Readiness Assessment will be at the C level or higher.

EXAMINATIONS. All examinations will be worth 100 points each. There will be three exams of approximately 50 minutes each and a two-hour final examination. Please check the Lecture and Laboratory

Schedule (page 13) for the examination dates. The location of each exam will be announced later. **Make-up exams will not be given.**

LEARNING AIDS

COOPERATIVE LEARNING GROUPS
Students are asked to form groups of 4-5 students. Groups should sit together in the lecture hall and discussion sessions. Group discussions and assignments may occur during lecture. *Each group may find it helpful to study together outside of class.* Group membership is to be established and identified by February 2; see your T.A. for details. **One of the hallmarks of excellence of UW-Madison is the quality of its students. Share your talents with others and take advantage of the rich talent surrounding you.**

LEARNING COMMUNITIES. Several sections in this lecture have been set aside for specific residence hall students. Section 431/731, Chadbourne Residential; section 432/732, Sellery residents; section 435/735, Ogg residents; and section 436/736, Witte residents. Chadbourne, Sellery, Ogg and Witte discussion sections will meet in their respective residence halls. All lab sections meet in the Chemistry building.

WORKBOOK FOR GENERAL CHEMISTRY. The WORKBOOK lessons provide a type of self-tutorial for each topic. These lessons provide you with written instructional materials as well as drill exercises. The format allows you to learn at your own pace by following the illustrations and examples in the Workbook.

CHEMICAL OF THE WEEK. To increase your knowledge about chemicals, their properties, production, cost, uses, etc., fact sheets about one or two key chemicals will be distributed on a weekly basis during Monday's lecture. Also, they may be found at *www.scifun.org*. You will be tested on the content of each fact sheet on each exam as well as on the final exam.

CHEM TIPS. *Chem*istry *T*eaching *I*nformation *P*rocessing *S*ystem. The objective of CHEM TIPS is to provide information about course progress to both students and instructors. In CHEM TIPS, you are given weekly surveys composed of a set of multiple choice questions. The surveys deal primarily with the subject matter of the preceding two lectures. Within hours (usually 4) after the survey is completed, an instructional message based on your responses to the survey questions will be sent to you through electronic mail. This message identifies the correct answers to the survey questions, suggests materials for further study of areas in which your answers were incorrect, and provides additional information to help you master the course material. Your T.A. and professor will receive summary reports to let them know how the class is doing and to help them identify topics that may be causing trouble.

The surveys will be given during the last 10 minutes of **Monday** lectures. The responses to CHEM TIPS surveys will be scanned optically and processed by computer. Therefore, **please bring a #2 pencil with you on Mondays to mark the optical scanner sheet**.

Participation in the CHEM TIPS program is optional. The results are *not* used in preparing course grades. In the past, nearly all students participated in CHEM TIPS, and student reactions and evaluations were highly favorable. It is very important for you to stay up-to-date in your studies, and CHEM TIPS will help you do this in Chemistry 104.

TIPS was developed by Professor Allen C. Kelley, Department of Economics, Duke University. CHEM TIPS was adapted and implemented beginning in 1973 by Professor Bassam Z. Shakhashiri, Department of Chemistry, University of Wisconsin-Madison.

EXAM STUDY QUESTIONS. About one week prior to each examination, a list of questions taken from old exams will be distributed. You should answer the questions as part of your review and study for the exam. Compare your solutions and answers with those of fellow students. If your solutions do not agree with those of others, then you should tackle the questions together. (Most, but not all, of the answers will be provided with the questions.)

STUDY EXERCISES. Study assignments are given in the Course Outline starting on page 10. You are not required to turn in the assignment; consequently study problems are not graded. You should work out the assigned problems because they are typical of the kinds of problems you are expected to master and handle with ease. If you have questions about the homework assignment, you should seek help from your T.A. in discussion section.

ADDITIONAL ACTIVITIES

BULL SESSIONS. These informal sessions are held 1-3 times during the semester. Their aim is to enable the professor to meet students in small groups. The sessions are held in the evening and are open to all those registered in this lecture section and their friends. Topics of discussion are not necessarily related to course materials. Refreshments will be served. The date of each session will be announced one week in advance.

KEEPING IN TOUCH WITH YOUR INSTRUCTORS. You should take full advantage of the availability of your lecture professor and your T.A. outside the classroom for face-to-face meetings and e-mail contact. My e-mail address is on the front page of this syllabus. I usually check my e-mail box once a day and attempt to answer my mail promptly. The T.A. e-mail addresses are on page 4.

HELPFUL STUDY HINTS

Read the assignment prior to lecture. Take *good* notes during the lecture (see page 9 of this syllabus for examples). Reread and study the appropriate pages in the textbook. Do the sample exercises in the book. Try the suggested exercises in the book. Also learn the key words and concepts listed on the left-hand side of this syllabus under each unit number. Use the Workbook which accompanies them.

Come to the discussion section prepared. Ask specific questions of your T.A. Make sure you understand the questions of your fellow students and the answers which your T.A. and others give.

Read the experiment. Complete the pre-lab assignment. While in lab, discuss your work with your fellow students and T.A. and complete the laboratory report before leaving unless instructed otherwise by your T.A.

UNIVERSITY COUNSELING SERVICE

Please take advantage of these services as soon as the need arises. Come and see me as soon as possible regarding the type of help suitable for your needs.

Individual counseling is available at University Counseling and Consultation Services. For more information call 265-5600 or go to 115 N. Orchard Street, Monday, Tuesday, Thursday and Friday, 8:30 - 5:00 p.m., and Wednesday, 9:00 to 5:00 p.m. or visit their web page at *http://www.uhs.wisc.edu*

STUDY SKILLS. Help with self-assessment, test anxiety, problem solving, time scheduling, note taking, exam preparation/taking, reading, efficiency, memory, concentration and procrastination is available through an one-credit course titled “Education Effectiveness” in the School of Education, Department of Counseling Psychology. Interested students should contact the department at 262-0461 to speak with an instructor.

WRITING LAB

As you work on your lab reports I'd encourage you to take advantage of the instruction offered by the University's Writing Lab. Writing lab instructors can help you make your writing the best that it can be. They'll meet with you individually or with your entire group to discuss drafts of your work. They can help you get started as you're generating and organizing ideas. They can give you a critical reaction to a draft—asking questions where ideas aren't clear, pointing out problems in organization and style, and offering advice for revision. For more information see their web page at http://www.wisc.edu/writing.

GREATER UNIVERSITY TUTORING SERVICE (GUTS)

GUTS offers free assistance to all enrolled UW-Madison students through a variety of programs. These include study group tutoring, individual tutoring, study skills counseling, exam files and drop-in centers. http://guts.studentorg.wisc.edu/

ALCOHOL AND DRUG ABUSE

Serious impediments to learning, personal growth and development, and responsible behavior can be caused by alcohol and substance abuse. The notorious national reputation of this Campus in this regard is shameful. Please follow the guidance provided by the Office of the Dean of Students and other officials to help achieve a drug-free environment and to exercise responsible and lawful use of alcoholic beverages.

GUIDELINES FOR DEMONSTRATION NOTES

These Guidelines should help you take effective notes about the demonstrations Professor Shakhashiri presents during lecture. The demonstrations display phenomena and illustrate principles discussed in the lecture. They are intended to enhance your understanding of the lecture material. Therefore, it is essential that you take accurate and complete notes about the demonstrations.

Three steps are involved in taking good notes about the demonstrations.

1. Describe the equipment and materials at the start of the demonstration. Be sure to include any information Professor Shakhashiri may provide about the equipment and materials.
2. Describe what Professor Shakhashiri does with the equipment and materials.
3. Describe what happens as a result of what Professor Shakhashiri does. Describe the changes that occur during the process, as well as the final condition of the materials.
4. Review your notes and rewrite them when necessary to ensure clarity.

As examples, notes for some lecture demonstrations are included below; they show how a student writes out in fuller comprehensible form the abbreviated notes written down during lecture.

A. "Bubbles and Fog" Demonstration (Part 1)

1. Describe the equipment and materials at the start of the demonstration. Be sure to include any information Professor Shakhashiri may provide about the equipment and materials.

   4 glass cylinders, each with volume of about 1 liter. One pair of cylinders contains about 800 mL of pink liquid in each cylinder. The other pair contains about 800 mL of purple liquid in each. A bucket of white solid covered with fog. The white solid is dry ice (solid carbon dioxide). Dry ice has a temperature of -78°C. It sublimes, that is, changes directly from solid to gas.

2. Describe what Professor Shakhashiri does with the equipment and materials.

   Professor Shakhashiri puts on cloth gloves and drops chunks of dry ice into one of the cylinders of pink liquid and one of the cylinders of purple liquid.

3. Describe what happens.

   The chunks of dry ice sink to the bottom of the liquids. Bubbles form on the dry ice and rise to the top of the liquids. Fog forms at the tops of the cylinders containing dry ice. The fog spills over the tops of the cylinders and sinks down their sides. The colors of the liquids gradually change: the pink liquid fades to colorless, the purple liquid changes to green and then to yellow. The color changes take about 30 seconds.

B. "Bubbles and Fog" Demonstration (Part 2)

1. Describe the equipment and materials at the start of the demonstration.

   5-liter flask of hot water is brought into lecture hall. Brown plastic dish pan. Chunks of dry ice.

2. Describe what is done with the equipment and materials.

   The hot water is poured into the dish pan. Then, dry ice is poured into the hot water.

3. Describe what happens.

   Cloud of fog rises to about 2 meters above the pan. Then, the cloud sinks and fog pours over the edge of the pan and onto the floor. The production of fog gradually diminishes and stops after about 3 minutes.

COURSE OUTLINE

TEXT = Chemistry & Chemical Reactivity, WKBK = Workbook for General Chemistry
EQUIL = Chemical Equilibrium, KIN = Chemical Kinetics

Note: An exam may occur in the middle of a unit.

CARBON CHEMISTRY (7 Lectures)

MOLECULAR STRUCTURES AND ISOMERS

READINGS – TEXT 11.1
EXERCISES – TEXT Ch 11: 3, 11, 15, 57, 59 (w/o names)
WKBK Lessons 32 & 35

HYDROCARBONS

READINGS – TEXT 11.2, Appendix E.1
EXERCISES – TEXT Ch 11: 5, 7, 9, 11, 17, 19, 21, 23, 25, 27, 61, 67, 83
WKBK Lesson 33 (pp 407 – 419), Lesson 34 (pp 430 – 432)

ALCOHOLS, ETHERS, & AMINES

READINGS – TEXT 11.3, Appendix E.2
EXERCISES – TEXT Ch 11: 31, 33, 35, 37
WKBK Lesson 33 (pp 419 – 429), Lesson 34 (pp 433 – 434)

CARBONYL COMPOUNDS

READINGS – TEXT 11.4
EXERCISES – TEXT Ch 11: 39, 41, 43, 45, 47, 51, 77
WKBK Lesson 34 (pp 435 – 444)

Exam I Friday, February 16 11:00 – 11:50 a.m.

EQUILIBRIUM PRINCIPLES (2 Lectures)

READINGS – EQUIL pp 1 – 31
EXERCISES – EQUIL 1.1 – 1.4, 2.1 – 2.4, 3.1 –3.4
WKBK Lessons 17 & 6

SOLUTION EQUILIBRIA (4 Lectures)

READINGS – EQUIL pp 32 – 45, 46 – 86
EXERCISES – EQUIL 4.1– 4.6, 5.1 – 5.7
WKBK Lessons 22, 18, 19, 20, 21

COORDINATION COMPOUNDS (3 Lectures)

READINGS – TEXT 22.3 – 22.6
EQUIL pp 87 – 100
EXERCISES – TEXT Ch 23: 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 31, 39, 51, 53
WKBK Lesson 25, 26, 27

ExamII Friday, March 16 11:00 – 11:50 a.m.

ELECTROCHEMISTRY (4 Lectures)

ELECTROCHEMICAL CELLS
READINGS – TEXT 20.2 – 20.4
EXERCISES – TEXT Ch 20: 7, 9, 13, 17, 19, 21, 23, 53, 57, 59
WKBK Lesson 29 (pp 349 – 358)

CONCENTRATION EFFECTS & BATTERIES
READINGS – TEXT 20.5 – 20.6
EXERCISES – TEXT Ch 20: 11, 25, 27, 29, 33, 35, 37
WKBK Lesson 29 (pp 359 – 364)

ELECTROLYTIC CELLS
READINGS – TEXT 20.7 – 20.8
EXERCISES – TEXT Ch 20: 41, 43, 45, 47, 49, 69, 71, 81
WKBK Lesson 30

KINETICS (4 Lectures)

READINGS – KIN pp 1 – 50
EXERCISES – KIN Problems 1 – 9
WKBK Lesson 23

Exam III Friday, April 20 11:00 – 11:50 a.m.

NUCLEAR TRANSFORMATIONS (3 Lectures)

NATURAL RADIOACTIVITY
READINGS – TEXT pp 1110 – 1118
EXERCISES – TEXT Ch 23: 12, 14, 18, 20, 22
WKBK pp 377 – 381

ENERGY IN NUCLEAR TRANSFORMATIONS
READINGS – TEXT pp 1119 – 1121, sections 23.5 – 23.7
EXERCISES – TEXT Ch 23: 24, 26, 28, 46, 50, 58
WKBK pp 381 – 388

USES OF NUCLEAR TRANSFORMATIONS
READINGS – TEXT 23.4, 23.8 – 23.9
EXERCISES – TEXT Ch 23: 30, 36, 54, 56
WKBK pp 389 – 392

POLYMERS (2 Lectures)

READINGS – TEXT 11.5
EXERCISES – TEXT Ch 11: 53, 55, 79
WKBK Lesson 36

Summary Exam Thursday, May 17 2:45 – 4:45 p.m.

Lecture and Laboratory Schedule – Spring 2007
Chemistry 104 Lecture Section 2

DATE	LECTURE TOPIC	WEEKLY LABORATORY EXPERIMENT
Jan 22 (M)	Course Introduction	No Lab
Jan 24 (W)	Carbon Chemistry	
Jan 26 (F)	**Readiness Assessment**	
Jan 29 (M)	Carbon Chemistry	Check–in, Molecular Structures, Excel Exercise
Jan 31 (W)	Carbon Chemistry	
Feb 2 (F)	Enrichment	
Feb 5 (M)	Carbon Chemistry	Preparation of Aspirin & Some Flavoring Esters
Feb 7 (W)	Carbon Chemistry	
Feb 9 (F)	Enrichment	
Feb 12 (M)	Carbon Chemistry	No Lab
Feb 14 (W)	Carbon Chemistry	
Feb 16 (F)	**Exam I 11:00 a.m.**	
Feb 19 (M)	Equilibrium Principles	Chemical Equilibrium & Le Chatelier's Principle
Feb 21 (W)	Equilibrium Principles	
Feb 23 (F)	Enrichment	
Feb 26 (M)	Solution Equilibria	Equilibrium Exercises
Feb 28 (W)	Solution Equilibria	
Mar 2 (F)	Enrichment	
Mar 5 (M)	Solution Equilibria	Acid and Base Solutions
Mar 7 (W)	Solution Equilibria	
Mar 9 (F)	Enrichment	
Mar 12 (M)	Coordination Compounds	No Lab
Mar 14 (W)	Coordination Compounds	
Mar 16 (F)	**Exam II 11:00 a.m.**	
Mar 19 (M)	Coordination Compounds	Redox Titration
Mar 22 (W)	Electrochemistry	
Mar 24 (F)	Enrichment	
Mar 26 (M)	Electrochemistry	Copper Ammine Complexes
Mar 28 (W)	Electrochemistry	
Mar 30 (F)	No Lecture	
Apr 2 – 6	**Spring Break**	
April 9 (M)	Electrochemistry	Electrochemical Cells
April 11 (W)	Kinetics	
April 13 (F)	Enrichment	

DATE	LECTURE TOPIC	WEEKLY LABORATORY EXPERIMENT
April 16 (M)	Kinetics	No Lab
April 18 (W)	Kinetics	
April 20 (F)	**Exam III 11:00 a.m.**	
April 23 (M)	Kinetics	Kinetics of the Reaction of Crystal Violet with
April 25 (W)	Nuclear Transformations	Sodium Hydroxide
April 27 (F)	Nuclear Transformation	
April 30 (M)	Enrichment	Neutron Activation of Silver/Checkout
May 2 (W)	Nuclear Transformation	
May 4 (F)	No Lecture	
May 7 (M)	Polymers	No Lab
May 9 (W)	Polymers	
May 11 (F)	No Lecture	
May 17 (R)	**FINAL EXAM**	2:45 – 4:45 p.m.

DUE To Your T.A. Friday February 2nd, 2007

CHEMISTRY 104 Lecture Section 2
Professor Bassam Z. Shakhashiri

INFORMATION SHEET
Please PRINT

Name_____,_____
(last) (first)

Lab Section_____

T.A._____

Telephone_____ attach photograph here

e-mail_____

Classification_____

Major_____

If you are currently enrolled in a Math course, indicate its number: _____

Number of high school chemistry years completed: 0 1 2 3 AP

Indicate year of last high school chemistry course:_____

Name and location of high school: _____

Circle number of college chemistry courses taken: 0 1 2 3

Give the number of credit hours you are taking this semester: _____

Give number of hours per week you are working (paid or volunteer) this semester:_____

I plan to take another chemistry course beyond this: Yes No Don't Know

Please tell me a couple of interesting things about yourself.