CHEM 111-03, General Chemistry I, Fall 1999

Chemistry 111, General Chemistry I
Fall Semester, 1998-99
Section 3 - M Hour
Instructor: Robert G. Mortimer
Office: 211 Kennedy Hall
Phone: 843-3955 (office), 382-3825 (home)
Email: MORTIMER (local) - mortimer@rhodes.edu (Internet)

DESCRIPTION: This course is the first semester of a two-semester sequence of courses covering general chemical principles and inorganic chemistry. It will emphasize atomic and molecular structure, chemical reactions, and the descriptive chemistry of certain elements.

GOALS: In this course, you should work on the following:

1. Mastery of factual chemical knowledge. Chemistry includes a large quantity of factual information, and much of the factual knowledge is summarized and generalized by scientific laws. In this course, you will enlarge your factual knowledge of the laws of chemistry.

2. Understanding of chemical theories. Factual chemical information is explained and correlated by chemical and physical theories. In this course, you will enlarge your understanding of these theories and your ability to apply these theories to specific chemical systems.

3. Demonstration of an ability to apply your knowledge and understanding. You should be able to demonstrate that you can use your knowledge and understanding both appropriately and creatively.

4. Development of problem-solving skills. Much of what is done in chemistry requires the use of logical reasoning to determine what analysis is needed to solve a problem, and then applying mathematics and other tools to solve the problem. In this course, you will practice and enlarge these skills.

TEXTBOOK: William R. Robinson, Jerome D. Odom, and Henry R. Holtzclaw, Jr., *Essentials of General Chemistry*, 10th edition, Houghton Mifflin Co., New York, 1997.

CONDUCT OF THE COURSE:

1. Class meetings: The class will meet at the M hour, Tuesdays and Thursdays, from 9:40 a.m. to 11:10 a.m. The course will be conducted as lectures and discussions with class participation. You are expected to attend every meeting of the class and to be prepared to participate.

2. Reading Assignments: You should plan to read the textbook material at least twice. You should read it quickly before the lecture covering that material, without worrying about details, and more carefully afterwards.

3. Quizzes: There be occasionally be unannounced quizzes, which can cover material you should have read as well as material already discussed in class.

4. Homework: There will be a set of homework problems assigned for each chapter. You must write out a complete solution for every problem, first attempting every homework problem individually. You may work together with other students on a

specific homework problem only after you have attempted the problem individually. Group efforts in which students work problems collectively without first having attempted them individually are not permitted. The instructor's solutions to the problems will be placed in the Chemistry Library on the due date for the homework set. After you have completed the problems, you will grade your own homework, using the instructor's solutions as a guide. A correct or nearly correct solution for any problem is worth two points, a solution that is approximately half correct is worth one point, and a solution that is less than one-fourth correct is worth no points. After you have graded your homework, you will write your score on your paper and turn it in to the instructor so that the score can be recorded.

5. Examinations and quizzes: There will be three 90-minute examinations and a final examination. The final examination will be a standardized multiple-choice examination, and will cover the entire semester.

6. Element data base: As part of our study of the descriptive chemistry of the representative elements, you will construct a data base for several elements, in which you will organize and record information about each element's physical properties, characteristic chemical reactions, history, and use. You may use any sources for data, including the textbook, the CRC Handbook of Chemistry and Physics, and sites on the Internet such as http://www.shef.ac.uk/chemistry/web-elements/.

EVALUATION:

Each examination will count 100 points, and the final examination will also count 100 points. The homework will count 100 points. Each unannounced quiz will count 4 to 10 points. The final grade will be determined as follows:

Letter grade	Percentage of total points
A-/A	90-100
B-/B/B+	80-89
C-/C/C+	70-79
D-/D/D+	55-69

GETTING HELP:

The instructor is generally in his office daily from 8:30 a.m. to 5:30 p.m., except during C hour and M hour and the Tuesday and Wednesday laboratory periods. He is usually available for consultation whenever he is in his office. If you have a question that probably has a quick answer, you can ask it by e-mail.

Tentative Lecture Schedule:

Period	Date	Chapter	Topic
1	Aug. 27	Ch. 1	Fundamental Concepts
2	Sept. 1	Ch. 2	The Language of Chemistry
3	Sept. 3	Ch. 2	
4	Sept. 8	Ch. 3	Chemical Stoichiometry
5	Sept. 10	Ch. 3	
6	Sept. 15	Ch. 3	
7	Sept. 17	Ch. 8	Chemical Reactions

8	Sept. 22	Ch. 8	
9	Sept. 24	Ch. 21	The Representative Metals
10	Sept. 29		Examination 1. Chapters 1-3, 8, 21
11	Oct. 1	Ch. 4	Thermochemistry
12	Oct. 6	Ch. 4	
13	Oct. 8	Ch. 5	Atomic Structure and the Periodic Table
14	Oct. 13	Ch. 5	
15	Oct. 15	Ch. 5	
	Oct. 20	Fall recess	
16	Oct. 22	Ch. 22	The Nonmetals
17	Oct. 27	Ch. 22	
18	Oct. 29		Examination 2. Chapters 4, 5, and 22
19	Nov. 3	Ch. 6	Chemical Bonding
20	Nov. 5	Ch. 6	
21	Nov. 10	Ch. 6	
22	Nov. 12	Ch. 7	

Tentative Lecture Schedule (continued):

23	Nov. 17	Ch. 7	
24	Nov. 19	Ch. 7	
25	Nov. 24	Ch. 7	
	Nov. 26	Thanksgiving recess	
26	Dec. 1		Examination 3. Chapters 6 and 7
27	Dec. 3	Ch. 10	Gases
28	Dec. 8	Ch. 10	
	Dec. 12	Final Examination, 8:30 a.m. One alternate time can be arranged.	

LABORATORY: Chemistry 111L, General Chemistry Laboratory I, is taken with this lecture course. It is a separate course with a separate grade, carrying one credit hour. Laboratory manuals are available in the Chemistry Storeroom, room 302K, for $7.50, including a laboratory notebook. Your first laboratory session will be September 1, 2, or 3, depending on your section. You should obtain your manual and read the first experiment before your first meeting.