CHEMISTRY 111: GENERAL CHEMISTRY I

Fall, 1999 - M Hour: Tu, Th 9:40-11:10

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DESCRIPTION: In this course, you will study several of the fundamental principles that define chemistry by exploring the composition, structure, properties and reactivity of matter. You will focus most of your attention on inorganic compounds, but the underlying ideas in the models of bonding and reactivity that we will discuss are applicable to most compounds. At the completion of the class, you should have a solid introduction to the models that scientists use to explain the observed composition, structure and reactivity of matter, and should be able to apply these models to help you predict such properties.

GOALS: To be successful in this course, the goals that you should work towards are;

1. Acquiring knowledge about the composition, structure, properties and reactivity of a variety of chemical substances;
2. Understanding some of the models that scientists use to explain the observed the composition, structure, properties and reactivity of matter;
3. Demonstrating an ability to apply your knowledge of the composition, structure, properties and reactivity of matter appropriately.

TEXT: *Essentials of General Chemistry*, 10th ed., by Robinson, Odom, and Holtzclaw.

EVALUATION: In this course, you will be evaluated on your ability to demonstrate your knowledge and understanding of chemistry as well as your ability to apply your knowledge and understanding to analyze and solve qualitative and quantitative problems. There will be three examinations and one comprehensive final examination during the semester. Each of the three exams as well as the final exam will count 200 points.

Your final grade is determined by the total number of points you attained on these exams.

Grade	Total points
A	720-800
B	640-719
C	560-639
D	400-559
F	below 400

Plus and minus assignments will be made approximately within these ranges.

POLICIES: Your attendance and participation at every class meeting is expected. In instances in which an absence is unavoidable, please contact me promptly. If you are unable to attend a class, all material discussed and assignments given are your responsibility.

There will be regularly assigned readings and problem sets. None of these assignments are graded; they are for your benefit only. We will discuss these readings and problem sets during class, and I will expect your input. These assignments are the minimum I believe is necessary for an average student to understand the subject material.

You will be allowed to make up a missed exam with an excused absence. If at all possible, please let me know ahead of time if you are not able to take an exam at its scheduled time so that we can arrange another time for you to take it. If the absence is not excused, you will receive zero points for the exam. Your exams and other work specified must be pledged to be your own.

SCHEDULE

Day	Date	Topic(s)	Chapter(s)
Th	8/26	Course overview, expectations; Introductory concepts	1
Tu	8/31	Atomic Theory, compounds, nomenclature, equations	2
Th	9/2	Atomic Theory, compounds, nomenclature, equations	2
Tu	9/7	Atomic Theory, compounds, nomenclature, equations	2
Th	9/9	Chemical reactions and the Periodic Table	8
Tu	9/14	Atomic structure, spectra, properties	5
Th	9/16	Atomic structure, spectra, properties	5
Tu	9/21	Atomic structure, spectra, properties	5
Th	9/23	EXAM I	
Tu	9/28	Chemical stoichiometry	3
Th	9/30	Chemical stoichiometry	3
Tu	10/5	Chemical stoichiometry	3
Th	10/7	Chemical reactions: The descriptive metals	21
Tu	10/12	Chemical reactions: The semi-metals and nonmetals	22
Th	10/14	Thermochemistry	4
Th	10/21	Thermochemistry	4
Tu	10/26	Thermochemistry	4
Th	10/28	EXAM II	
Tu	11/2	Chemical bonding	6
Th	11/4	Chemical bonding	6
Tu	11/9	Chemical bonding	6
Th	11/11	Chemical bonding	6
Tu	11/16	Molecular structure	7
Th	11/18	Molecular structure	7
Tu	11/23	Molecular structure	

Tu	11/30	EXAM III	
Th	12/2	Gases	10
Tu	12/7	Gases	10

ELEMENT DATA BASE: We will approach the descriptive chemistry of metals (Chapter 21) and the semi-metals and nonmetals (Chapter 22) by constructing an element data base for representative elements. For each element specified, you will locate (using the information in Chapters 21-22 of your textbook, other sources such as the *CRC Handbook of Chemistry and Physics* or internet sites) information specified on that element and record it. The information you collect will be shared with your classmates during class.

LABORATORY: The laboratory component of this course will begin the third week of classes (the week of September 6) at the regularly scheduled times in Room 301 or 308 (for Dr. Pendley's Tuesday 111 lab) Kennedy. Laboratory manuals and notebooks are available from Mr. Goode in the Chemistry Stockroom (Room 302 Kennedy) and cost $8.00. You should read the first experiment and come prepared for lab on the first day.