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CHEMISTRY 111, GENERAL CHEMISTRY I

Fall, 1999 – B and C Hours

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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. We will focus most of our attention on inorganic compounds, since the underlying ideas in the models of bonding and reactivity as they apply to these substances are applicable to organic compounds as well. At the completion of the class, you should have had a solid introduction to the basic models that chemists use and should be able to apply these models to help you predict chemical behavior.

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

1. Obtaining knowledge about the composition, structure, properties, and reactivity of a range of chemical substances
2. Understanding the basic models that scientists use to explain the observed composition, structure, properties and reactivity of matter.
3. Being able to demonstrate an ability to apply your knowledge and understanding of chemical matters appropriately and creatively
4. Improving your skills in solving both qualitative and quantitative problems

TEXT: Essentials of General Chemistry by Robinson, Odom, & Holtzclaw, 10th Edition

EVALUATION: During the semester, there will be four exams worth 100 points each for a total of 400 points. The fourth exam, the final exam, will be comprehensive and will be a standardized, multiple choice test. The course grade will be arrived at according to the following scale:

- A --- 358-400 points
- B --- 318-357 points
- C --- 278-317 points
- D --- 198-277 points
- F --- 0-197 points

Plus and minus assignments will be made within these ranges. Your success on these examinations will depend not only on the correctness of your answers but also on how you develop those answers. Attention to detail, clarity in presentation, and consistency in the application of the principles involved will all improve your point sum.

POLICIES: Your attendance at every class meeting is expected and is important to your ultimate success in the class. In instances in which an absence is unavoidable, you should contact me as promptly as you can to allow me to help as you work with the material missed.

You will be allowed to make up a missed exam only with an excused absence. If possible, you should let me know ahead of time if you are not able to take an exam at its scheduled time so that we can make plans to prevent you from falling behind. If the absence is not excused, you will receive no points for the exam.

There is no make up for a missed in-class activity.

You will be expected to have a calculator and should expect to bring it to class every day. Programmable features on calculators may not be used on exams, however.

The Honor Code, of course, governs your activities in this class, and all work turned in for grading must be pledged to be your own.

Problem sets will be assigned on a regular basis. Although these will not be turned in or graded, their completion is essential for your success in the class. An answer key will be made available, and I would strongly encourage you to discuss with me either in class or in my office questions that arise in your work with these sets. Ultimately, all material discussed in class and assignments given are your responsibility.

My door is always open to you for questions arising out of your work in this class, and I am very interested in helping you make a success of your work in general chemistry. Please feel free to come see me.

SCHEDULE: In this semester we will work our way through eleven chapters in the text. Our schedule will be:

Weeks 1 - 4 Chapters 1 - 3 (Matter, Reactions, and Stoichiometry)
Chapter 8 (Chemical Reactions)
Chapter 21 (The Representative Metals)

Exam I Monday, September 27

Weeks 5 - 8 Chapter 4 (Thermochemistry)
Chapter 5 (Atomic Structure and The Periodic Table)
Chapter 22.7-22.27 (The Non-metals)

Exam II Wednesday, October 27

Weeks 9 - 12 Chapters 6 and 7 (Bonding and Structure)
Chapter 22.7-22.27 (The Non-metals)

Exam III Monday, November 22

Weeks 13 - 14 Chapter 10 (Gases)

Final Exam Friday, December 10 (8:30-11:00 am) - B Hour
Monday, December 13 (8:30-11:00 am) - C Hour

Please mark the exam dates on your calendar and make your plans appropriately.

ELEMENT DATA BASE: We will approach the descriptive chemistry of the representative metals (Chapter 21) and the non-metals (Chapter 22) by developing a element data base. For each element specified, you will be expected to find and organize information on the element's physical properties, preparation, reactions, and use. Although there is information in the text to help in this task, other sources such as the *CRC Handbook of Chemistry and Physics*, and various sites on the internet such as

<http://www.webelements.com/>

may come in handy as well. The information you collect will be shared with your classmates during class on successive Fridays.

LABORATORY: The laboratory will start the week after Labor Day at the regularly scheduled times and in Room 301K or 308K (unless a notice on the lab door directs you elsewhere). Laboratory manuals and notebooks will be available from Mr. Goode in the Chemistry Storeroom (302K) after September 1 and will cost \$8.00.

You will

find it worthwhile to get your manual early enough to allow you to read through the first experiment before the first lab day.