

Dr. Gabriel Caruntu

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On-line homework:

www.masteringchemistry.com

General Chemistry for Engineers

Mo, Tue, We, Thu 2:00 PM -2:50

Office hours: Mo, Tue

11:00 AM-12:00 or upon
appointment

1014 Spring 2010

Textbook:	Nivaldo Tro, <i>Chemistry: A Molecular Approach</i> , 2th Edition, Prentice Hall, 2008
Calculator:	For quizzes and examinations the use of calculators is permitted
Prerequisite:	Prerequisite: successful completion of (or exemption from) Mathematics 1115 or 1125 or, a minimum math ACT score of 23. Also, students are expected to have had chemistry in high school. A course in the fundamentals of chemistry of particular interest to students in engineering programs. Credit cannot be earned for Chemistry 1014 and either Chemistry 1017 or Chemistry 1018. Chemistry majors should not take this course.

Schedule of Assignments

<i>Week of</i>	<i>Lecture topic</i>	<i>Reading Prerequisites and Enrichment Materials</i>	<i>Problem Sessions, Quizzes, Exams, etc.</i>
January 11	Matter, Measurement and Problem Solving	Tro Ch. 1, Handouts	Q
January 18	Atoms and Elements	Tro Ch. 2, Handouts	Q
January 25	Molecules, Compounds and Chemical Equations	Tro Ch. 3, Handouts	Q
February 1	Chemical Quantities and Aqueous Reactions	Tro Ch. 4, Handouts	Q
February 4	<i>Exam 1</i>	Ch. 1-4	
February 8	Gases	Tro Ch. 5, Handouts	Q
February 15	Thermochemistry	Tro Ch. 6, Handouts	Q
February 22	The Quantum-Mechanical Model of the Atom	Tro Ch. 7, Handouts	Q
March 1	Periodic Properties of the Elements	Tro h. 8, Handouts	Q
March 4	<i>Exam 2</i>	Ch.5-8	
March 8	Chemical Bonding I: Lewis Theory	Tro Ch. 9, Handouts	Q
March 15	Chemical Bonding II: Molecular Geometry and Hybridization of the Atomic Orbitals	Tro Ch. 10, Handouts	Q
March 22	Liquids, Solids and Intermolecular Forces	Tro Ch. 11, Handouts	Q
April 5	Solutions	Tro Ch. 12, Handouts	Q
April 8	<i>Exam 3</i>	Ch. 9-12	
April 12	Chemical Kinetics	Tro Ch. 13, Handouts	Q
April 19	Chemical Equilibrium	Tro Ch. 14, Handouts	Q
April 26	Free Energy and Thermodynamics	Tro Ch. 15, Handouts	Q
May 5	<i>Comprehensive Final Exam</i>	Ch. 1-15	

Jan.18, Feb.13-16; March 29-April 2 are University Holydays. No classes are held. The last day of Classes is April 30, 2010. Final examinations are scheduled for May 3-7.

Required purchases:

1. Nivaldo Tro, "Chemistry: A Molecular Approach", 2th Edition, Prentice Hall, 2008, ISBN-0-13 100065-9

Recommended textbooks and educational materials:

1. Raymond Chang "Chemistry" 8th or 9th Ed. New York: McGraw-Hill, 2007

STUDENT LEARNING OBJECTIVES: Students who complete this course should have a basic understanding of general chemistry principles, including atoms, molecules, and bonding; the periodic table and the atomic structure; chemical stoichiometry, properties of solids, liquids, and gases; thermodynamics and energy; chemical equilibrium; organic chemistry and kinetics.

CLASS ATTENDANCE: According to the UNO policies and regulations, attendance of the freshman courses is *mandatory*. Attendance will be taken at the beginning of each class period. 5% of your final grade will be based on attendance.

CLASSROOM CONDUCT: Cell phones should be turned OFF before entering class. Chronic tardiness will be penalized. Talking and other distracting behavior is not permitted during class. Asking questions and participating in class activities are encouraged.

DISABILITIES: Students who qualify for services will receive the academic modifications for which they are legally entitled. It is the responsibility of the student to register with the Office of Disability Services (UC 260) each semester and follow their procedures for obtaining assistance.

ACADEMIC MISCONDUCT: Any material submitted in General Chemistry for Engineers must represent your own work. Apparent violations of this standard will be referred to the University Committee of Academic Misconduct (COAM) as required by Faculty Rules. Any work copied from a book or journal or another student without reference will be considered plagiarized and no credit will be given for the work it is part of. Extensive paraphrasing will receive the same treatment. Please remember this when you are writing reports and answering problem sets! Although consultation between students in solving problems is encouraged, identical problem sets with single authors will be considered plagiarized and will be given no credit. If you worked with others, give them credit. Any cheating on *exams* (copying from each other or from materials brought in, substitute examinees, changing answers after tests have been returned, stealing tests, etc.) will result in a **grade of F** for the course. Without honesty, there is no science - there can be no compromises at any stage.

STUDENT RESPONSIBILITY: Each student receives this information about Chemistry 1014 in the first lecture sections. It is your responsibility to read this material and be familiar with course content, course procedures, and grading. You are also responsible for any announcements concerning course procedures which are made in class, whether you are present or not! (If you are absent, you are expected to get notes, announcements, etc. from another student in the class.)

QUIZZES: are worth a total of 10 points each. Fifty points are awarded for attendance and participation in class activities at the discretion of the instructor. Points will be deducted for students who arrive late or who fail to participate. Each quiz will be handed out in the first 10 minutes of the class. Take home quizzes are to be worked out individually without assistance from others. *Make-ups are not given*; although if you miss recitation you may pick up and turn in the take home quiz (attendance /participation points will be lost). If you miss class when the quiz is given, you may take the quiz the next lecture with a 3 point penalty.

MID-QUARTER EXAMS: *These exams are given only at the times shown on the Schedule of Assignments.* Makeup exams will be given only in the last week of regularly scheduled classes for special circumstances* (documented) or a preapproved university conflict. A sign-up sheet for the make-up exams will be available in

the last week of April. Exams are a scheduled part of this course and attendance is required (exam location is the same as the lecture). Students with University conflicts should consult the lecturer. Computer answer sheets from exams will not be returned.

**No make-up exams will be given except with written official verification of the following: serious illness or injury, death of an immediate family member. In such cases Dr. Caruntu should be contacted before the exam.*

FINAL EXAM: The final exam must be taken at the University scheduled time. UNO ID cards will be collected at the final exam. Final exams will not be returned. Bring your **approved calculator** to **ALL** exams.

SECRETS TO SUCCESS: General Chemistry has the reputation of being a hard course, requiring a lot of independent work, especially with problems. The goal of this class is to provide a freshman student the ability to use simple chemical concepts to solve various types of problems and interpret chemical reactions. There is no question that it will challenge your organizational skills, but your instructor is evidence that it is possible to succeed. Be forewarned, though: it is not possible to succeed in General Chemistry without good study habits. The three secrets are: **never get behind, practice, and always think** about why the phenomena occur. My lectures will focus on the information found in the text; I will emphasize the experiments and reasoning behind the mechanisms more than the text does. Although I may be a little ahead or behind the schedule above, I will discuss the topics in the order listed. Read the chapters ahead of time: you won't understand everything, but you will learn much more in the lecture classes. Topics emphasized in class (relative to the book) will be those which merit extra time because of difficulty or importance. I will be providing a variety of enrichment materials during the semester to assist you in your learning and help relate the topics discussed to your other courses and interests.

OFFICE HOURS: I will be in my office SC 2001 on Monday and Tuesday from 11:00 AM-12:00 PM.

GRADING: There will be three exams during the term plus a cumulative final. These tests will evaluate your understanding and recollection of the chemistry included in your text. All of the questions on exams will require you to write, draw, outline or otherwise tell me what you understand about general chemistry. All exams are closed book and notes are not permitted. Your performance in the course will be evaluated on the basis of total points earned. Course grades will be determined from exam grades, quizzes, and attendance. The distribution of points is as follows:

Online assignments	200 points
Exam 1	150 points
Exam 2	150 points
Exam 3	150 points
Final Exam	200 points
<u>Attendance, Quizzes, and In-class Activities</u>	<u>150 points</u>
Total	1000 p

Free Tutoring Available On-Campus from the UNO Learning Resource Center:

www.uno.edu/~lrc/index.htm