

Syllabus
General Chemistry I
CHE 120-N03

Fall 2007
TR 8:00 - 9:15 A.M.
SC-308

Instructor: J. H. Niewahner, SC-448

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Office Hours: M 9:00-9:50, T 1:40-2:55, W 2:00-2:50, R 9:25-10:40, F 10:00-10:50

Others by appointment

General Website: http://www.nku.edu/~chemistry/general_chem/

Faculty Website: <http://www.nku.edu/~niewahnerj/>

Prerequisite: High School Chemistry and either a minimum score of 20 on ACT math section or equivalent; or a C or better in CHE 102; or placement

Co requisite: CHE 120L any section

If for any reason you need to withdraw from CHE 120 lecture, you must also withdraw from the lab, CHE 120L

Required Text: Kotz, J.C.; Treichel, P.M.; Weaver, G.C. *Chemistry and Chemical Reactivity*, Sixth edition; Thomson Brooks/Cole: Belmont, CA; 2006

Web Access: This is a web-enhanced course which requires students to access and use various internet resources such as email, Blackboard, and On-line Web Learning (OWL). For Blackboard go to <http://learnonline.nku.edu> and then to Student Support Site and How to Log In. For OWL go to the General Chemistry website then to OWL Instructions.

Course Content: Chapters 1 through 10 and 12 of text.

1. Matter and Measurement
2. Atoms and Elements
3. Molecules, Ions, and Their Compounds
4. Chemical Equations and Stoichiometry
5. Reactions in Aqueous Solution
6. Principles of Reactivity: Energy and Chemical Reactions
7. Atomic Structure
8. Atomic Electron Configurations and Periodicity
9. Bonding and Molecular Structure: Fundamental Concepts
10. Bonding and Molecular Structure: Orbital Hybridization and Molecular Orbitals
12. Gases and Their Properties

Major Learning Objectives for General Chemistry I:

After completing General Chemistry I, students will be expected to:

1. Perform calculations involving chemical and physical processes, use the factor label method, record numerical answers with proper units, and attain proficiency in the proper use of scientific notation and significant figures, including the concept of uncertainty in scientific measurements.
2. Name compounds and ions, write their chemical formulas, calculate their molar masses and percent composition, and determine the empirical and molecular formulas of compounds.
3. Classify substances, reactions, and processes according to various classification schemes.
4. Complete and balance chemical equations, determine whether or not a reaction actually occurs based on chemical and physical properties of the reactants and products, and solve stoichiometry problems.
5. Describe and calculate the energy changes involved in chemical reactions and physical processes.
6. Describe the atomic and electronic structure of the elements.
7. Predict the relative magnitudes of physical properties of elements on their electronic structures.
8. Describe the intramolecular bonding of substances and determine the structures of compounds.
9. Describe properties of real and ideal gases using the Kinetic Molecular Theory and solve gas law problems.

A more detailed list of objectives can be found on the General Chemistry webpage http://www.nku.edu/~chemistry/general_chem/

At the beginning of each chapter of the text is a list of goals for that chapter.

Study Time: Approximately 6-8 hours of study time per week. Test preparation will be in addition to the normal study time.

Attendance: Students are expected to attend all classes. Students are responsible for all information, material, and assignments presented in class or distributed on Blackboard.

Assignments: You will be assigned numerous on-line exercise modules from each chapter. Assignments will be posted on the on-line web learning (OWL) network. These are to be done on your own and completed by the due date. No credit will be given for late assignments. Assignments are due by 3:00 AM of the date shown on the schedule. The assignment with the lowest percentage will be dropped from grade consideration.

Quizzes: On-line quizzes will be given throughout the semester. You will be given a limited amount of time to complete the quiz once you have begun. The quizzes must be completed within a specified period of time by 3:00 AM of the date shown on the schedule in order to receive credit. Quizzes will be posted on Blackboard. The quiz with the lowest percentage will be dropped from grade consideration.

Tests: There will be three tests during the semester. The dates for these tests are listed on the attached schedule. There will be no make-up tests. A student who misses one

test will be allowed to have the Final Exam count 40% rather than 20%. Each additional missed test will count as zero. When absolutely necessary and with advance request, a student may take a test one day early without any penalty.

Calculators: Programmable and graphics calculators are not permitted during tests or quizzes. Calculators will be necessary for taking tests and quizzes. In no case may calculators be passed from one student to another during a quiz or a test. The lack of an operable calculator will not excuse a student from having to solve a problem. Common \$10-15 scientific calculators are adequate.

Grading: Quizzes and Assignments = 20% of overall score

Tests = 60% of overall score

Final Exam = 20% of overall score

<u>Overall Score</u>	<u>Final Grade</u>
90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Important Dates Relative to General Chemistry I, CHE 120-N03

Aug. 20	First day of class
Sept. 10	Last day to "X" form the course.
Oct. 29	Last day to "W" from the course.
Nov. 21 - 23	Thanksgiving Holidays. No class.
Dec. 6	Last day of class.

Sept. 11	Test 1.	Chapters: 1,2,3
Oct. 9	Test 2.	Chapters: 3,4,5
Nov. 8	Test 3.	Chapters: 6,7,8
Dec. 13	Exam	Comprehensive. Chapters 1 through 10 and 12. 8:00 A.M. to 10:00 A.M.

Topics Used in Organic Chemistry

Most students enrolled in General Chemistry I and II will enroll in Organic Chemistry the following year. Below is a list of topics covered in General Chemistry I and II that you must understand in order to be successful in Organic Chemistry. The page numbers adjacent to each topic represent the first page of sections in the text "Chemistry & Chemical Reactivity", 6th Ed., by Kotz, Treichel, and Weaver where the topic is discussed.

General Chemistry I

Isomerism	455
Atomic & molecular orbitals	320; 457
Lewis dot structures	382
Formal charges	405

General Chemistry II

Nonbonding interactions	591
Kinetics	700
Chemical equilibria	758
Acids and bases	796

Resonance	390	Gibbs free energy	921
Shapes of molecules	397		
Hybrid orbitals	439		
Polarity of molecules	413		

Chemistry Course Policies

Policies of the Department of Chemistry at Northern Kentucky University

- All items on syllabi are subject to change by the instructor.
- Students are responsible for reading and understanding all items on the syllabi. Any items not understood must be brought to the attention of the instructor within the first two weeks of class.
- The work you will do in any course is subject to the Student Honor Code. The Honor Code is a commitment to the highest degree of ethical integrity in academic conduct, a commitment that, individually and collectively, the students of Northern Kentucky University will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements. The Honor Code can be accessed at http://www.nku.edu/~deanstudents/student_rights/honor_code/htm. Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, faculty members have the right to determine actions to be taken when a student is caught cheating.
- Faculty members reserve the right to dismiss or to have removed a disruptive student from their classrooms.
- A grade of C or better is required in CHE 120 and CHE 120L to enter CHE 121 and CHE 121L.
- This is a web enhanced course. Students meet at regularly scheduled class time and will need access to the internet to fulfill course requirements.

General Chemistry Withdrawal Policy

Any student withdrawing from either General Chemistry I (lecture) or General Chemistry Lab I must also withdraw from the other. Failure to do so will result in the department withdrawing the student from both lecture and lab.

Cell Phones

Students are asked to turn off their cell phones during class. If you expect an emergency call please notify your instructor. Under no circumstance will students be allowed to use their cell phones during a test. **Using a cell phone during a test will be considered cheating.**

Cheating

Students caught cheating or plagiarizing for the first time will receive a grade of zero for that test or assignment. Students caught cheating or plagiarizing a second time will receive an F for the course and will be reported to the Dean of Students.

Students with Disabilities

Students with disabilities who require accommodations (academic adjustments, auxiliary aids or

services) for this course must register with the Disability Services Office. Please contact the Disability Service Office immediately in the University Center, Suite 320 or call 859-572-6373 for more information. Verification of your disability is required in the Disability Services Office for you to receive reasonable academic accommodations. Visit the Disability Services website at www.nku.edu/~disability/.

TR
CHE 120-N03, FALL 2007

MONTH (WEEK NO.)	MON	TUES	WED	THUR	FRI
AUG (1)	20 Classes Begin	21	1	22	23 1/2
(2)	27	28 <i>OWL-1</i> 2	29 <i>Bb Q1</i>	30	31 <i>OWL-2</i> 3
SEPT (3)	3 Labor Day No Classes	4 <i>Bb Q2</i>	3	5	6 3/Catch Up &Review 7
(4)	10 Last Day to "X"	11 T1(1,2,3)	12	13 3/4	14
(5)	17 <i>OWL-3</i>	18 <i>Bb Q3</i> 4	19	20 4/5	21
(6)	24 <i>OWL-4</i>	25 <i>Bb Q4</i> 5	26	27 5	28
OCT (7)	1	2 5	3	4 Catch up & Review	5 <i>OWL-5</i>
(8)	8 <i>Bb Q5</i>	9 T2(3,4,5)	10	11 6	12
(9)	15 Fall Break No Classes	16 Fall Break No Classes	17	18 6	19
(10)	22 <i>OWL-6</i>	23 <i>Bb Q6</i> 7	24	25 7	26
(11)	29 Last Day to "W"	30 <i>OWL-7</i>	8	31 <i>Bb Q7</i>	1 8
					2

NOV (12)	5 <i>OWL-8</i>	6 Catch up & Review <i>Bb Q8</i> 7		8 T3(6,7,8)	9	
(13)	12	13 9	14	15 9	16	
(14)	19	20 9/10	21 Thkgv Brk No Classes 22 Thkgv Brk No Classes	23 Thkgv Brk No Classes		
(15)	26	27 <i>OWL-9</i> 10	28 <i>Bb Q9</i>	29 10	30	
DEC (16)	3 <i>OWL-10</i>	4 <i>Bb Q10</i>	12	5	6 12	7 Last Day <i>OWL-12</i>
	10	11	12	13	14	