

Course Syllabus General Chemistry I CHE 121 – 001 Spring 2008

Course Days, Times and Room: M, W, F 9:00 - 9:50, SC 308
Instructor: Dr. Laura Padolik
Office: SC 451 Phone: 859-572-6113 e-mail: padolikl@nku.edu
Office Hours: M, W, F 10:00 - 10:50; 1:00 – 1:50
Prerequisite: General Chemistry I (Grade C or better)
Corequisite: General Chemistry II Laboratory
Required Text: *Chemistry & Chemical Reactivity*, Kotz, Treichel, & Weaver. Sixth Edition, Thomson, Brooks/Cole

Course Description: Chemistry 121 is a class for science majors where the principles of chemistry from General Chemistry I are explored in further detail. Topics covered include solutions, kinetics, equilibrium and acid and base chemistry. This class meets the general education requirements in the natural sciences. This is a web enhanced course. Students meet regularly scheduled class times and will need access to the internet to fulfill course requirements.

Course Objectives: The course objectives for General Chemistry II can be found on the last page of the syllabus and a detailed list under Course Materials on the Blackboard site.

Course Calendar: Important dates and the tentative class schedule are found on the class calendar which is on the third page of the syllabus.

Attendance: Although attendance is not normally taken, students are responsible for all information, material and assignments presented in class.

Blackboard: Students will be expected to use Blackboard to receive announcements and any additional information about class. The syllabus, class calendar, handouts, answers to quizzes and exams will be posted on Blackboard. Out of class, on line quizzes will also be given in Blackboard. See below for more details. Blackboard can also be used to check grades and find useful websites.

Assignments: Chemistry is a problems based course and successfully completing all assigned problems will help you succeed on quizzes and exams. An online website called OWL (Online Web based Learning), administered by Thomson Learning will be available for student use. Problems assigned in OWL will count toward your grade. Due dates for each set of chapter problems are listed on the course calendar. OWL homework will count a total of 100 points.

Exams: There will be 4 exams and a comprehensive final exam. Exams will be given out of class on Friday afternoons on the dates listed on the calendar. Exams will be given over a two hour interval, either from 2:00 – 4:00 or 3:00 – 5:00. The location for each exam will be announced in lecture and on Blackboard. In general, there will be no make up exams. If you miss an exam because of an emergency, you must contact the instructor before the next scheduled class meeting.

Final Examination: The General Chemistry standardized test, written by the American Chemical Society is given in this class.

Quizzes: Quizzes will be given online through Blackboard every Tuesday. Students are expected to work independently without the aid of books or notes. Please follow the NKU Honor Code. Each quiz will be worth 10 points and the best ten scores will count towards your grade. Make up quizzes will not be given. In class quizzes may also be given during the semester.

Calculators: Calculators are necessary for this class. In order to maintain equality however, programmable calculators will not be permitted for use on exams or quizzes.

Problem Solving Sessions will be held on Tuesdays, starting the second week of class.

Grading:

Exams:	400 points (100 points each)
Final Exam:	150 points
Quizzes:	100 points
OWL Homework	100 points

Grading Scale:

A	≥ 675 points
B	600-674 points
C	525-599 points
D	450-524 points
F	< 450 points

The Tentative Calendar is attached to the syllabus.

Please see Blackboard for information about disability services and the learning assistance program.

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.

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 class rooms.

The Instructor reserves the right to modify the syllabus at any time during the semester.

Students are required to read and understand the contents of this syllabus. Any questions must be brought to the instructor's attention by January 25, 2008.

Department of Chemistry
Student Learning Outcome

1. Explain the major concepts and experimental findings in the chemical sciences.
2. Utilize critical thinking skills to apply concept knowledge and adapt experimental techniques to:
a) form and test hypotheses and b) solve scientific problems
3. Compile, critically evaluate, and interpret scientific information and data.
4. Effectively communicate scientific information through written and oral means.
5. Evaluate the relationships between chemistry and mathematics, physics, biology, and other disciplines and between chemistry and society.
6. Apply computer technology and other technologies in the comprehension, interpretation, and presentation of the chemical sciences.

Major Learning Objectives for General Chemistry II

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

1. Describe the intermolecular bonding of substances, and relate the bonding type and/or structures of substances to their chemical and physical properties.
2. Describe properties of liquids and solids. Understand phase changes and the energy terms associated with them.
3. Describe the process of solution formation and the properties of solutions. Calculate the concentration of solutions in a variety of units. Carry out calculations involving the colligative properties of solution.
4. Discuss the factors that affect the rates of chemical reactions, determine rate laws and carry out calculations involving concentration, time data.
5. Write equations, equilibrium expressions and carry out calculations for various equilibria. Describe how changes in concentration and temperature affect equilibrium reactions.
6. Characterize acids, bases and salts by Arrhenius or Bronsted-Lowry definitions. Carry out pH calculations. Relate the properties of acids to their structure.
7. Identify and describe the properties of buffer solutions. Carry out calculations involving buffer solutions. Carry out calculations with solutions of slightly soluble salts and describe the factors that affect their solubility.
8. Discuss the relationship between enthalpy, entropy and free energy and their relationship to spontaneity. Carry out calculations of enthalpy, entropy and free energy.
9. Describe voltaic and electrolytic cells. Write equations for oxidation-reduction reactions and calculate cell potentials for these reactions.
10. Describe nuclear reactions, the uses of radioisotopes and the properties of alpha, beta and gamma radiation.