

Syllabus Chemistry 121, Section N04, Spring 2009

Instructor: Richard E. Bloss
Class Hours: Mondays and Wednesdays, 6:15 PM – 7:30 PM
Office Hours: immediately following lectures or by appointment
Telephones: 513-579-5443 (weekdays) or 513-233-3102 (home);
E-Mail: blossr@nku.edu or blossre@hotmail.com
Required Text: Chemistry & Chemical Reactivity, sixth edition, by Kotz, Treichel & Weaver
Internet Access to Blackboard and Owl is also required.

Date(s)	Event	Points
1/12 – 2/11	Lectures (10), Unit 1 (Ch. 13, 14, 15)	
1/19	Martin Luther King Day, no classes	
1/26	Two lectures, 6:15 PM-9:00 PM	
2/2	Last date to drop with no grade	
2/16	Exam, Unit 1	100
2/18 – 3/16	Lectures (6), Unit 2 (Ch 16, 17)	
3/9 – 3/14	Spring Break, no classes	
3/18	Exam, Unit 2	100
3/23 – 4/20	Lectures (9), Unit 3 (Ch. 18, 19, 20)	
3/30	Last date to drop with a “W” grade	
4/22	Exam, Unit 3	100
4/27	Take-Home Term Assignment Due	100
4/27 – 4/29	Lectures, Unit 4 (Ch. 23)	
5/4, 6:45 – 8:45 PM	Final Exam, Chapters 1-23	100
TBA	All Take-Home “Quizzes”	100

Notes:

- Students are responsible for reading and understanding all items on this syllabus. Any items not understood must be brought to the attention of the instructor by the end of class on Wednesday, January 21.
- Testing dates, topics to be covered and all items on this syllabus are subject to change by the instructor. Announcement of changes will be made during regularly scheduled class sessions and/or via Blackboard.
- Take-home quiz assignments will be given in addition to the scheduled exams. These assignments will be announced in-class and will have a total value of 100 points for the entire semester. **If you miss a class, it is still your responsibility to learn of and complete these assignments by the assigned date, usually the beginning of the next class period. Such assignments will be posted in Blackboard in the 24 hours following their announcement in class.** “Owl” may be used for some or all of these. If an assignment is turned in on time, it is worth up to the entire point value. Late submissions of assignments will be worth up to only 50% of the announced value if turned in up to one class meeting late, and 0% thereafter.
- Final semester grades will be based on total points. Tentative grading scale is as follows:
(100% - 90%) A (89% - 80%) B (79% - 65%) C (64% - 50%) D (below 50%) F
- Unexcused absences from exams will not be tolerated and will result in a grade of 0. In cases of serious illness on the day of the exam, a written statement from your physician may be required in order for a make-up exam to be given. In any event, the instructor must be notified *prior* to the time the exam is to begin if an absence is to be excused.
- Assignments not turned in during class meetings should be emailed, by the due date/time, or placed in the instructor’s mailbox in the Chemistry Department office. Do not attempt to slide them under the door of the instructor’s office.
- Group help sessions will be held immediately after the last lecture prior to each scheduled exam. Individual assistance is typically available after all other lectures.
- Cell phones should be turned off, silenced or set to vibrate during lecture periods. Cell phones must remain completely off, silenced and out of sight during test periods. They are not permitted at all during the final.**

9. Attendance to class lectures is strongly recommended. Test questions may draw from lecture topics not covered in the text.
10. Students who wish to use audio recording devices during lectures are welcomed to do so and may place such devices on the lecture desk for improved audio quality.
11. Students with special visual or auditory needs should sit in the front rows of the room. Any students with any special needs should identify themselves to the instructor within the first two weeks of the semester so that appropriate accommodations can be made, if possible. 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 (or see <http://www.nku.edu/~disability>) for more information. Verification of your disability is required in the Disability Services Office for you to receive reasonable academic accommodations.
12. This is a web-enhanced class, and students are expected to maintain Internet access throughout the duration of this course. Inability to access the Internet from your residence does not excuse a student from assignments or information distributed through that medium.
13. Additional departmental information is available at www.nku.edu/~chemistry/general_chem
14. Course is subject to NKU 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: www.nku.edu/~deanstudents/policies.htm
15. Cheating or plagiarism will not be tolerated. The instructor will determine the actions to be taken in response to a student caught cheating or plagiarizing, in accordance with the Code of Student Rights and Responsibilities.
16. Faculty members reserve the right to dismiss or have any disruptive student removed from the classroom.

Major Learning Objectives

- ❖ Describe the intermolecular bonding of substances, and relate the bonding type and/or structures of substances to their chemical and physical properties.
- ❖ Describe properties of liquids and solids. Understand phase changes and the energy terms associated with them.
- ❖ 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 solutions.
- ❖ Discuss the factors that affect the rates of chemical reactions, determine rate laws and carry out calculations involving concentration and time data.
- ❖ Write equations and equilibrium expressions, and carry out calculations for various equilibria. Describe how changes in concentration and temperature affect equilibrium reactions.
- ❖ Characterize acids, bases and salts by Arrhenius or Bronsted-Lowry definitions. Carry out pH calculations. Relate the properties of acids to their structure.
- ❖ 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.
- ❖ Discuss the relationship between enthalpy, entropy and free energy and their relationship to spontaneity. Carry out calculations of enthalpy, entropy and free energy.
- ❖ Describe voltaic and electrolytic cells. Write equations for oxidation-reduction reactions and calculate cell potentials for these reactions.
- ❖ Describe nuclear reactions, the uses of radioisotopes and the properties of alpha, beta and gamma radiation.

Expected Student Learning Outcomes

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

Suggested Practice Problems from the Back of Each Chapter ...

Chapter 13: 1, 5, 13, 17, 21, 25, 27, 31, 33 (a&b), 35, 43, 55, 57, 65, 67, 69

Chapter 14: 1, 5, 9, 11, 13, 23, 27, 33, 37, 39, 43, 47, 49, 53, 65, 71, 77, 85, 91, 93, 101

Chapter 15: 1, 3, 7, 11, 19, 21, 25, 29, 33, 37, 41, 49, 51, 55, 59, 63, 67, 75, 83, 89, 91, 97

Chapter 16: 1, 3, 9, 11, 13, 15, 17, 19, 23, 25, 33, 39, 45, 49, 51, 55, 57, 65, 69

Chapter 17: 1, 3, 7, 9, 13, 15, 19, 25, 29, 31, 33, 37, 39, 43, 47, 51, 53, 57, 59, 61, 63, 67, 69, 79, 81, 87, 91, 93, 101

Chapter 18: 3, 7, 11, 13, 17, 21, 25, 27, 28, 31, 33, 35, 41, 43, 45, 47, 49, 53, 67, 73, 81, 87

Chapter 19: 1, 3, 7, 11, 17, 19, 25, 29, 31, 33, 39, 43, 49, 53, 61, 63, 75, 77, 83

Chapter 20: 3, 5, 9, 13, 17, 19, 21, 27, 29, 31, 41, 43, 47, 49, 57, 59, 65, 71, 85

