

General Chemistry II – Spring 2009

Syllabus – General Information

CHE 121-N01

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Office Hours: Mondays, Wednesdays & Fridays: 10:00 - 11:30 am, or by appointment.

1- **CLASS**: Mondays, Wednesdays & Fridays: 9:00 am – 9:50 am. Room SC-308

2- **PRE-REQUISITE**: Grade C or better in General Chemistry I (CHE 120)

3- **CO-REQUISITE**: CHE 121L any section. **If for any reason, you need to withdraw from CHE 121 lecture, you MUST also withdraw from the lab, CHE 121L.**

4- **TEXTBOOK**: *Chemistry & Chemical Reactivity*, 6th Edition. Kotz, Treichel & Weaver. Publisher: Thomson, 2006.

5- **COURSE DESCRIPTION**: Chemistry 121 is a class for science majors where the principles of chemistry from General Chemistry I are explored in further details. Topics covered include solutions, kinetics, equilibrium and acid base chemistry. This class meets the general education requirements in the natural sciences.

6- **COURSE CONTENTS & OBJECTIVES**: Chapter 13 through 20 & Chapter 23. The major learning objectives of General Chemistry II are given at the end of this syllabus. A detailed list of objectives can be found on the General Chemistry web site (http://www.nku.edu/~chemistry/general_chem).

7- **INTERNET RESOURCES**: This is a web-enhanced course. Students meet regularly at scheduled class time and will need access to the Internet to fulfill the course. Students are expected to be familiar with the use of the following web sites:

NKU General Chemistry Website: http://www.nku.edu/~chemistry/general_chem, where you can find information relevant to this course.

Blackboard: <http://learnonline.nku.edu/>, where announcements, syllabus, class calendar, chapter outlines, lecture notes, online quizzes, practice exams, grades and any additional information about the class can be found

Online Web based Learning (OWL): <http://owl.thomsonlearning.com>, where required assignments as well as optional, but recommended, problems can be found.

8- **LECTURE NOTES**: Lecture notes will be available on the Blackboard site prior to the lectures. The lecture notes will contain the major concepts discussed in class as well as problems illustrating these concepts. The **problems will be worked out during the lecture**. You are encouraged to work on these problems prior to the lecture. The **detailed solutions will NOT be provided on the web**. Simply **downloading the lecture note will NOT substitute for attending the lecture**, as the lecture period will mainly focus on application of the concepts and problem solving. It is **in your best interest to attend the lectures. Students are responsible for the whole chapter whether discussed in lecture or not, unless mentioned by the instructor.**

9- REVIEW SESSIONS: Review sessions will be given prior to the exams in room SC 426. The dates and times are given with the exam schedule on page 5 of this syllabus, and will be posted on Blackboard as reminders. These review sessions are not mandatory, but may be very helpful in preparation of an exam. If you choose to attend the review session, it is strongly recommended you come prepared with a list of questions.

10- STUDY TIME: You need to study at least 2 to 3 hours outside of class for each hour in class. Test preparation needs to be counted in addition to the normal study time. **On average you should commit yourself to studying 7-10 hours a week.**

11- CLASS ATTENDANCE: Policies are based on students being mature individuals. As such, students are expected to attend each class period and absences should be justified. While there is no point penalty specified for class absences, experience has shown a definite correlation between poor class attendance and low grades. It is strongly suggested that you attend every class session.

- ◆ If you arrive late, please take a seat promptly and quietly.
- ◆ If you have to leave before the end of the class period, inform your instructor before the lecture starts and take a seat at the end of a row or in the front rows and leave the room quietly.
- ◆ Leaving the room during the lecture is NOT allowed.

12- ELECTRONIC DEVICES: Students are asked to **turn off their electronic devices (cell phones pagers, etc.)** during class. If you expect an emergency call, please notify your instructor prior to the beginning of the lecture period. Under no circumstances will students be allowed to use their cell phone during a test. Using a cell phone during a test will be considered cheating.

13- CALCULATORS: ONLY **SCIENTIFIC** CALCULATORS will be accepted. You will NOT BE ALLOWED TO USE programmable calculators (even with cleared memories) or cell phones during a test. 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. Make sure you know how to operate your scientific calculator before you use it during a test.

14- COMMUNICATION WITH THE INSTRUCTOR:

You should always feel free to seek any appropriate out-of-class assistance from the instructor in your efforts to master the class materials. Feel free to contact your instructor, but please:

- ◆ Use the office hours, if possible
- ◆ If the office hours are not convenient for you, make an appointment (preferably by email)
- ◆ Do not expect an instant reply to your email or voicemail messages.
- ◆ Come prepared with specific questions
- ◆ Do not come few minutes before a deadline (homework or test). No help will be provided within less than 4 hours of a deadline.

Emails TO your instructor:

- ◆ **Must have a subject in the subject line.** Emails with "no subject" in the subject line will automatically be deleted
- ◆ **The subject line must start with CHE 121.** Do not use subject such as "Hi" or "Hello" as those messages will automatically be deleted. Example of correct subject: "CHE 121: Question on Monday's lecture".

Emails FROM your instructor:

- ◆ Personal communication will be **sent to your nku.edu email account**, and will contain CHE121 in the subject line. Make sure you check out this account on a regular basis or have your messages forwarded to the account you regularly use.
- ◆ Communication to the entire class will be posted on the Blackboard site under “Announcements”.

15- DEPARTMENT OF CHEMISTRY POLICIES:

- **Academic Honesty:** 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/students_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. 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 for the second time will receive an F for the course and will be reported to the Dean of Students.
- Faculty members reserve the right to dismiss or to have removed a disruptive student from their classroom.
- All items on syllabi are subject to change by the instructor.
- Students are responsible for reading and understanding all items on the syllabus, and recognize this obligation by signing and returning the attached form. Any items not understood must be brought to the attention of the instructor within the first two weeks of class.

16- GENERAL CHEMISTRY WITHDRAWAL POLICY: Any student withdrawing from either General Chemistry II (CHE 121 lecture) or General Chemistry Lab II (CHE 121L) must also withdraw from the other. Failure to do so will result in the department withdrawing the student from both lecture and lab.

17- 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 Services Office located in the University Center, Suite 320, call (859) 572-6373 or visit their web site at www.nku.edu/~disability/ for more information. Verification of the student’s disability is required by the Disability Services Office for you to receive reasonable academic accommodations.

18- IMPORTANT DATES:

| DATE | EVENT | DATE | EVENT |
|------------|--------------------------------------|----------|-----------------------------|
| January 12 | First day of classes | March 30 | Last day to drop with a “W” |
| January 19 | Martin Luther King Day No classes | May 1 | Last day of class |
| February 2 | Last day to drop without a grade | May 4-8 | Final examinations |
| March 9-14 | Spring Break / No classes | | |

General Chemistry II – Spring 2009

Syllabus – Assignments, Quizzes, Tests and Grading System

CHE 121-N01

1- HOMEWORK ASSIGNMENTS:

- Each chapter will be assigned a homework **set** of one or more assignments. Assignments will be given through the Online Web based Learning (OWL, <http://owl.thomsonlearning.com>).
- You will have a total of nine (9) homework **sets**. The eight (8) best scores will count toward your grade.
- Assignments are **due by midnight on the dates listed on the OWL WEBSITE**. The OWL assignment dates listed on the course calendar are tentative and subject to change. **Do not wait until few minutes before the deadline to work on your assignment, as technical problems may always occur.**
- LATE ASSIGNMENTS will NOT received ANY CREDIT.
- Assignments have to be completed online. No other form of assignment will be accepted.
- A list of recommended problems may also be provided and will show as “optional” in OWL. These will not be collected or count toward your grade.

2- QUIZZES:

Two types of quizzes will be given:

1. On-line quizzes:

- Nine (9) on-line quizzes will be given through the Blackboard web site (<http://learnonline.nku.edu/>). Each on-line quiz will be worth 10 points and the eight (8) best scores will count toward your grade.
- On-line quiz due date are listed on the course calendar (OL-QUIZ).
- Each student will have 26 hours (from 8:00 am until 10:00 am the next day) on the listed date to access the on-line quiz. Do not wait until the few minutes before the deadline to work on completing your quiz, as technical problems may always occur. Each student will have a different quiz, as each quiz is a random combination of similar questions.
- Once started, the on-line quiz **must be completed within 45 minutes**.

2. In-class quizzes:

- Three (3) in-class quizzes will be given. Each in-class quiz will be worth 10 points and the two (2) best scores will count toward your grade.
- The dates for the in-class quizzes will be announced either in class or on the Blackboard site under “Announcements”.
- The in-class quiz **must be completed within 15 minutes**.

During all quizzes, the students are expected to **follow the NKU Honor Code and work independently** without the aid of books or notes. **There will be no make-up quizzes under any circumstances and missed quizzes will be assigned a grade of zero.**

3- EXAMS:

- There will be four (4) exams during the semester and one (1) comprehensive final during the final week.
- **Exams will be given outside of the normal lecture time, either from 2:00 to 4:00 pm or from 3:00 to 5:00 pm on the dates indicated below.** If your schedule does not allow you to take the exams during these time periods, **you MUST make alternate arrangements with the instructor during the first two weeks of the semester.** The exam must be taken on the same scheduled day, but can be taken earlier if needed.
- Book, notes, assignments are not allowed during the tests.
- Exams have a standard format with a part containing questions and/or problems and a multiple-choice part.
- **There will be NO MAKE-UP EXAMS. A missed exam will be replaced by the score obtained on the final, provided you produce an appropriate reason and written documentation for the missed exam. Only ONE MISSED EXAM is allowed. Each additional missed exam will be assigned a score of zero.**
- **Questions about exam grade should be addressed to the instructor WITHIN FIVE DAYS of the return of the graded exam.**

EXAM SCHEDULE:

| Exam | Date | Time | Chapters covered | Review Session |
|---------|----------|------------------------------|------------------|--------------------|
| EXAM #1 | Feb. 6 | 2:00-4:00 pm or 3:00-5:00 pm | Chapters 13 &14 | Feb. 4 @ 5:00 pm |
| EXAM #2 | March 6 | 2:00-4:00 pm or 3:00-5:00 pm | Chapters 15 & 16 | March 4 @ 5:00 pm |
| EXAM #3 | April 3 | 2:00-4:00 pm or 3:00-5:00 pm | Chapters 17 &18 | April 1 @ 5:00 pm |
| EXAM #4 | April 24 | 2:00-4:00 pm or 3:00-5:00 pm | Chapters 19 & 20 | April 22 @ 5:00 pm |
| FINAL | May 4 | 8:00-10:00 am | Comprehensive | To be announced |

Conduct during an exam:

1. ONLY SCIENTIFIC CALCULATORS will be accepted. You will NOT BE ALLOWED TO USE programmable calculators (even with cleared memories) or cell phones during a test.
2. Use only blue or black pens. No pencils.
3. The calculators will be checked prior the beginning of the test. Have your calculator ready to show the instructor when entering the room.
4. Cell phones and any other electronic devices must be turned off. Hats/hoods must be removed.
5. Books, notes should be closed.
6. Do not share calculators or papers during the test. Return extra paper and appendices with your test.
7. If you have a question, raise your hand, do not leave your seat.
8. Leave the room quietly, after you have completed the test.

EXTRA CREDIT: For each exam, up to 10 extra points may be earned by going over your exam making the appropriate corrections and orally presenting the corrections to your instructor. If you opt for this extra credit opportunity, **you need to make an appointment and meet with your instructor WITHIN FIVE DAYS of the return of your graded exam.** During the meeting with the instructor, up to

five questions or problems from the exam will be selected and you will be asked to show and to explain how you corrected and solved these questions or problems.

4- GRADING SYSTEM:

| Graded Work | Points / Each | Possible Points |
|----------------------------------|----------------------|----------------------------|
| Eight (8) OWL sets graded | 15 | 120 (14.6% of final grade) |
| Ten (10) Quizzes graded | 10 | 100 (12.2% of final grade) |
| Four (4) tests | 100 | 400 (48.8% of final grade) |
| One (1) comprehensive final exam | 200 | 200 (24.4% of final grade) |
| TOTAL | | 820 |

Tentative point grade distribution

| POINT RANGE | PERCENT | LETTER GRADE |
|--------------------|----------------|---------------------|
| 738 – 820 | 90% to 100% | A |
| 656 – 737 | 80% to 89% | B |
| 574 – 655 | 70% to 79% | C |
| 492 – 573 | 60% to 69% | D |
| < 491 | Below 60% | F |

Major Learning Objectives for General Chemistry II

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

- 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 solution.
- Discuss the factors that affect the rates of chemical reactions, determine rate laws and carry out calculations involving concentration, time data.
- Write equations, 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 Brønsted-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 relationships to spontaneity. Carry out calculations of enthalpy, entropy and free energy.
- Describe voltaic and electrolytic cells. Write equations for oxidation-reduction reactions and calculate the cell potentials for these reactions.
- Describe nuclear reactions, the use of radioisotopes and the properties of alpha, beta and gamma radiation.

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

Student Learning Outcomes

In addition to specific learning objectives, this course helps students meet the following student learning outcomes for the Department of Chemistry:

- Explain the major concepts and experimental findings in the chemical sciences.
- Utilize critical thinking skills to apply concept knowledge and adapt experimental techniques to:
i) form and test hypotheses, ii) 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, 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.