CHEM 1211K *Principles of Chemistry I*

Sections L2E, LXE, LXF *Fall 2007*

Instructor

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Office Hours:
M: 9:00 am – 11 am
W: noon – 2 pm
T, R, F: 11 am – noon and 2 – 3 pm

Purpose

This is the first course in a two-semester sequence covering the fundamental principles and applications of chemistry for science majors. The course satisfies Core Requirement in Area D. Topics to be covered include components of matter, chemical reactions and stoichiometry, gas laws, thermochemistry, quantum chemistry, atomic structure and properties, molecular models and chemical bonding. A guided inquiry approach will be used in both lecture and laboratory to promote active student learning as well as logical thinking and analytical reasoning in problem solving.

Textbook

Chemistry: The Molecular Nature of Matter and Change by Martin Silberberg, 4th edition, McGraw Hill is required. Students Solutions Manual accompanying textbook is optional.

Learning Outcomes

Each student will:

- acquire a basic understanding of the structure and properties of matter, types of chemical reactions, stoichiometry, gas properties, thermochemistry, modern atomic structure and properties, chemical bonding.
- learn to apply the scientific method in laboratory projects, collect and analyze scientific data and formulate appropriate conclusions from data analysis.
- demonstrate an understanding of basic scientific concepts across disciplines and appreciate the role of science and technology in everyday life.

Course Policies and Guidelines

- The official communication method between the instructor and students will be through campus e-mail (myUWG email account).
- Some of the course materials including the syllabus, class-notes, sample exams are available through WebCT Vista.
- The class meets on Tuesdays and Thursdays from 12:25 pm – 1:55 pm AND Fridays from 9:00 – 10:50 am in TLC 3108. Please come to class on time, and do not leave early.
- You are expected to behave professionally in this course, which means considering the effect that your behavior will have on other people involved in the course.
- Turn off pagers and cellular phones, and do not use them in class.
- You will not be allowed to use personal laptops in the classroom.
- Eating or drinking in the classroom/laboratory will not be allowed.
- You will earn a failing grade in the course if more than 30% of in-class activities are missed.
- No make up quizzes or exams will be given. In case of an illness or a dire emergency, the instructor must be contacted prior to the examination in-person, via phone or email. Accommodations for missed exams, quizzes and assignments will be handled depending on the severity of the situation between the student and the instructor.
- You should be prepared to spend at least **10 hours per week** studying chemistry outside the classroom.
- The best way to make sure that you have thoroughly understood the material covered in class is to **READ THE TEXTBOOK** and work through the appropriate problems (solved exercises in the textbook, problems solved/assigned in class, problems included in workshop and workbook) on a regular basis.

In-Class Assignments

These assignments include computer assignments, laboratory activities and announced/unannounced quizzes where you may need to use a scientific calculator and the textbook. Remember to bring your calculators and textbooks to class everyday since you cannot share these resources. All of the results from in-class activities will be submitted to the instructor before leaving the class. Late assignments will not be graded. There will be no makeup sessions for missed assignments.

Examinations

There will be four examinations and a comprehensive final examination during the semester. Each examination will be closed book and notes. You will need to bring a calculator to the tests. If necessary, I will provide the scantron sheets, periodic charts and conversion tables during the tests. In order to get full credit on tests, quizzes and other assignments, you must SHOW ALL WORK AND CALCULATIONS. Points will be deducted if you have correct responses with incomplete calculations and/or explanations.

The standardized examination from the American Chemical Society will serve as the final examination. It consists of multiple-choice questions, and is prepared by the American Chemical Society. If there is a conflict with the final exam time, you must provide me with written authorization from the Dean of Arts & Sciences to move your final exam time.

Academic Honesty Policy

We take academic honesty very seriously. Plagiarism of any sort will not be tolerated. Plagiarism is the use of someone else's ideas or words as your own. This definition includes copying another student's exam or assignment, as well as using material from a book or Internet site without acknowledging the source. If you plagiarize any part of an assignment for this course, you will receive a zero for the entire assignment, and disciplinary action will be taken.

Workshop Chemistry

In addition to regularly scheduled lecture and laboratory sessions, you will be REQUIRED to attend a 1.5 hour long workshop (on Mondays) to discuss chemistry problems and improve your understanding of the material. Your workshop will be led by an upper-level student leader who will facilitate activities that provide practice and build confidence in your ability to solve chemistry problems. Workbooks for the workshop will be distributed in class and must be brought to workshops every week.

Workshop Grades

You are not judged on actual right answers, but the effort you put. The workshop portion of your grade, will be based on: 1) Attendance. Don't arrive late; don't leave early. 2) Participation in group efforts to solve problems. 3) Preparation. Practice problems assigned from the textbook by your instructor should have been solved, or at least attempted, before the relevant workshop. Workshop leaders will randomly choose problems from the list to assign points for this part of the workshop. 4) Attitude.

Semester Grades

All exam, quiz and lab activity grades will be based on your ability to DEMONSTRATE full understanding of the material. Full credit will only be given if you SHOW ALL YOUR WORK, not just for obtaining the correct answer.

Your grade will be calculated based on the following components:

In-class exams (4 @ 100 points each)	400 points
Final (Comprehensive)	100 points
Quiz	75 points
Lab activities	100 points
Lab final	25 points
Workshops	100 points
TOTAL	**800 points**

The grading scale will be as follows:

90% : A; 80 – 89% : B; 70 – 79% : C; 60 – 69% : D; < 60% : F

Tentative Schedule for the Course

WEEK	*Tuesday*	*Thursday*	*Friday*
1	**August 14 – No class**	August 16 – Chapter 1	August 17 – Measurements
2	August 21 – Chapter 1	August 23 – Chapter 2	August 24- Mixtures
3	August 28 – Chapter 2	August 30 – Chapter 2	August 31 - Matter
4	September 4 – Chapter 3	September 6 – Chapter 3	September 7 – Matter
5	**September 11 – EXAM 1**	September 13 – Chapter 3	September 14 - Formula
6	September 18 – Chapter 3	September 20 – Chapter 3	September 21 - Reactions
7	September 25 – Chapter 4	September 27 – Chapter 4	September 28 - Reactions
8	October 2 – Chapter 5	**October 4 – EXAM 2**	October 5 - Gases
9	October 9 – Chapter 5	**October 11 – No class**	**October 12 – No class**
10	October 16 – Chapter 6	October 18 – Chapter 6	October 19 - Calorimetry
11	October 23 – Chapter 7	October 25 – Chapter 7	October 26– Spectroscopy
12	October 30 – Chapter 8	November 1 – Chapter 8	November 2 – Periodicity
13	**November 6 – EXAM 3**	November 8 – Chapter 9	November 9 –Demos
14	November 13 – Chapter 9	November 15 – Chapter 10	November 16 - Demos
15	November 20 – Chapter 10	**November 22 – No class**	**November 23 – No class**
16	November 27 – Chapter 10	**November 29 – EXAM 4**	**November 30 – Lab Final**
17	December 4 – Review	**December 13 – FINALS (11 am – 1 pm)**	