

# *Principles of Chemistry II*

*Spring 2007*

**CHEM 1212K    Sections L2E, LXE, LXF    TLC 3108**

**Tuesday and Thursday: 12:30 – 2:00 pm, Friday: 12:20 – 2:20 pm**

## ***Instructor***

Dr. Sharmistha Basu-Dutt  
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Office Hours:  
M, W 9:00 am – 12:15 pm  
T, R 2:00 pm – 3:30 pm

## ***Purpose***

This is the second course in a two-semester sequence covering the fundamental principles and applications of chemistry for science majors. Topics to be covered include equilibrium, thermodynamics, kinetics, and electrochemistry. A guided inquiry approach integrating lecture and laboratory will be used in the course to promote active student learning.

## ***Textbook***

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

## ***Learning Outcomes***

Each student will:

- acquire a basic understanding of equilibrium, acids and bases, solubility, thermodynamics, kinetics, electrochemistry, and selected descriptive inorganic chemistry.
- learn to apply the scientific method in laboratory projects, collect and analyze scientific data and formulate appropriate conclusions from data analysis.

## ***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 12:30 pm – 2:00 pm and on Fridays 12:20 pm – 2:20 pm 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.
- In addition to regularly scheduled lecture and laboratory sessions, you must attend a workshop that meets once a week (on Mondays or Fridays).
- 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 lose 10% per day for tardiness. 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 and will cover all topics from CHEM 1211K and CHEM 1212K. 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 one and a half hour workshop (Sections F, G, H or I) 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. Please purchase the workbook for the workshop from the bookstore at the start of the semester.

## ***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
<b>TOTAL</b>	<b>800 points</b>

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*

<i>WEEK</i>	<i>Tuesday</i>	<i>Thursday</i>	<i>Friday</i>
1	January 9 – Chapter 11	January 11 – Chapter 11	January 12 – Phases of matter
2	January 16 – Chapter 12	January 18 – Chapter 12	January 19 – Clausius Clapeyron
3	January 23 – Chapter 13	January 25 – Chapter 13	January 26 – Solution concentrations
4	<b>January 30 – EXAM 1</b>	February 1 – Chapter 13	February 2 – Colligative properties
5	February 6 – Chapter 16	February 8 – Chapter 16	February 9 - Kinetics
6	February 13 – Chapter 16	February 15 – Chapter 17	February 16 – Kinetics
7	February 20 – Chapter 17	February 22 – Chapter 17	February 23 – Equilibrium constant
8	<b>February 27 – EXAM 2</b>	March 1 – Chapter 18	March 2 – Le Chatelier’s principle
9	March 6 – Chapter 18	March 8 – Chapter 18	March 9 – Acid base titrations
10	March 13 – Chapter 19	March 15 – Chapter 19	March 16 – Acid base titrations
	<b>March 20 – Spring Break</b>	<b>March 22 – Spring Break</b>	<b>March 23 – Spring Break</b>
11	<b>March 27 – EXAM 3</b>	March 29 – Chapter 19	March 30 - Buffers
12	April 3 – Chapter 20	April 5 – Chapter 20	April 6 - Thermodynamics
13	April 10 – Chapter 21	April 12 – Chapter 21	April 13 – Redox reactions
14	April 17 – Chapter 21	April 19 – Chapter 21	April 20 – Redox reactions
15	<b>April 24 – EXAM 4</b>	<b>April 26 – Lab Final</b>	<b>April 27 – Reading Day</b>
16		<b>May 3 – FINAL EXAM</b>  <b>11 am – 1 pm</b>	