**CHEM 1211/004, 005, 006 Principles of Chemistry I Spring 2013**

**Co-Requisite CHEM 1211L Laboratory**

**Class: Mon. & Wed. 1-2:15 pm, H 200 Instructor: Wei Zhou, Ph.D.**

**Recitation: Mon. 10-10:50am Mon, D138 or**

**Mon. 3-3:50pm Mon, E154 or**

**Wed. 3-3:50pm Mon, E154**

**E-mail:** [**wzhou3@spsu.edu**](mailto:wzhou3@spsu.edu) **Office: E-142 Tel: (678) 915-3273**

**Office Hours: 11am-1pm on Mon., 12-1pm on Tue. Thu. and Fri.**

**Required Texts:**

Chemistry, 8th (or 9th) Ed., Zumdahl, Houghton Mifflin Co., Boston /New York.

**Description**:

This is the first course in a two-semester sequence covering the fundamental principles and applications of chemistry designed for science majors. Laboratory exercises compliment and supplement the lecture material.

**Student Learning Outcomes:**

1. Understand the general properties and structure of matter including dimensional analysis with proper attention to units and significant figures.
2. Name and classify inorganic compounds.
3. Understand and use the mole concept and mass-mole relationship.
4. Balance chemical equations.
5. Identify different types of reactions (precipitation, neutralization, oxidation-reduction) and predict the outcome of these reactions.
6. Apply gas laws and kinetic molecular theory to processes involving gases.
7. Understand the first law of thermodynamics and the role of energy and enthalpy in chemical reactions and perform thermochemical calculations.
8. Understand the basic concepts of quantum theory, determine the electron configurations of atoms, and use periodic trends to make predictions about atomic properties.
9. Use Lewis structures, determine the molecular geometry of molecules using VSEPR theory, and learn bonding theory, including hybridization

**Attendance:**

Attendance in lecture is expected. You are responsible for any material covered in class or in recitation. **Recitation attendance is required.** The recitation is designed to improve your classroom experience in an environment with a better student/teacher ratio. Your practice and study in recitation will improve your problem-solving ability and study outcomes. **On-time attendance and participation in recitation count for 10% of your grade** (see grading policy).

**CHEM1211L laboratory is now a separate course and a co-requisite of the lecture.** **There are no longer lab exemptions.** Even if you passed the lab under the earlier 4 credit hour 1211K, you must still take the lab.

**Cell phones, Smartphones, Blackberries, iPhones, iPads, computers and other electronic devices:** Please **turn off these devices** before you come to class and exams. If you have an urgent need to have yours on, see me before class begins to request an exception be made for you. The use of computers in class other than for note taking (and that only by permission) is prohibited. Unauthorized use of these devices could result in your expulsion from class. **Use your own calculator, pencils, and erasers for tests and exams.**

**Grading:**

An engagement report will be posted via Banner in late January based on your attendance and involvement in lecture, recitation and/or online Sapling. “Not Engaged” will result in your being contacted by SPSU with an inquiry as to your lack of engagement. “No Show” is given for lack of attendance and would have a similar affect BUT COULD ALSO AFFECT FINANCIAL AID if you are receiving it. This grade will not affect your class grade at all.

A midterm grade will be posted via Banner prior to the last day to withdraw without academic penalty. This grade will be given as an “S” (satisfactory, 70% or better) or a “U” (unsatisfactory, less than 70%) and will be based only on graded exams and your involvement in Sapling and recitation. No grades will be dropped for this estimation. **Any reports and assignment due but not yet received will be graded as zeros**.

The overall course grade is based on the following scale:

**Four Exams 60% (15% each) Final Exam 20% Sapling 10% Recitation 10% Total 100%**

You are required to take the Final Exam. The lowest grade the four exams that is missed or bombed, if lower than the final, may be replaced by the Final. Thus the Final may count as 35% of your grade. **No make-up exam or final will be given.** Finished exams and final will be kept by the instructor.

The following point scale will be employed.

A B C D F

**100-90 89-80 79-70 69-60 <60**

**Instructions to Access Sapling On-line Exercises:**

1. Go to http://www.saplinglearning.com

2. If you already have a Sapling Learning account, log in, then skip to step 5.

3. If you have a Facebook account, you can use it to quickly create a Sapling Learning account. Click "create account" located under the username box, then click "Login with Facebook". The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and fill in the remaining information, accept the site policy agreement, and click "Create my new account". You can then skip to step 5.

4. Otherwise, click "create account" located under the username box. Supply the requested information and click "Create my new account". Check your email (and spam inbox) for a message from Sapling Learning and click on the link provided in that email to confirm your account.

5. Find your course in the expandable list (sorted by subject, term, and instructor) and click the title link.

6. Select your payment options and follow the remaining instructions.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments.

During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling support team is almost always more able (and more quick) to resolve issues than your instructor.

**Honesty:**

For the tests of this course, the use of calculator programs as crib sheets will be considered cheating. The memories of programmable calculators may be cleared before exams. Talking, sharing of any calculator, pencil, or any other material, and the use of cell phones and other electronic devices other than calculators during exams will be considered cheating. The SPSU Honor Code and procedures for violations are detailed at<http://spsu.edu/honorcode/>.

**SPSU Honor Code:** As a member of the Southern Polytechnic State University community of scholars, I understand that my actions are not only a reflection on myself, but also a reflection on the University and the larger body of scholars of which it is a part. Acting unethically, no matter how minor the offense, will be detrimental to my academic progress and self-image. It will also adversely affect all students, faculty, staff, the reputation of this University, and the value of the degrees it awards. Whether on campus or online, I understand that it is not only my personal responsibility, but also a duty to the entire SPSU community that I act in a manner consistent with the highest level of academic integrity. Therefore, I promise that as a member of the Southern Polytechnic State University community, I will not participate in any form of academic misconduct. I also understand that it is my responsibility to hold others to these same standards by addressing actions that deviate from the University-wide commitment to working, living, and learning in an environment conducive to a quality education. Thus, I affirm and adopt this honor code of Southern Polytechnic State University.

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| Tentative Schedule Spring 2013:  (Subject to change. You are responsible for keeping up with changes in subject coverage or exam dates, both of which will be announced in class. If you miss class, contact me regarding changes.) | |
| **Subject** |
| Ch. 1: Chemical Foundations  Ch. 2: Atoms, Molecules, and Ions  Ch. 3: Stoichiometry |
| **Exam I: Ch. 1 – Ch. 3 on Jan. 30th** |
| Ch. 4: Types of Chemical Reactions and Solution Stoichiometry (omit 4.10)  Ch. 5: Gases |
| **Exam II: Ch. 4 – Ch. 5 on Feb. 27th** |
| Ch. 6: Thermochemistry  Ch. 7: Atomic Structure and Periodicity |
| **Exam III Ch. 5 – Ch. 7 on Apr.1st** |
| Ch. 8: Bonding General Concepts  Ch. 9: Covalent Bonding: Orbitals |
| **Exam IV Ch. 8 – Ch. 9 on Apr.29th** |
| **Final Exam Date and Time: TBA The Final is comprehensive of all the material covered.** | |
| **Jan. 21: MLK, Spring Break: Mar 3-9**  **First Day of Class: Jan 7, Engagement Grades Due: Jan 28, Midterm Grades Due: Feb 21, Last day to withdraw: Feb. 26, Last Day of Class: Apr. 29** | |

**Students with disabilities** who believe that they may need accommodations in this class or laboratory are encouraged to contact the counselor working with disabilities at (770) 528-7361 as soon as possible to ensure that such accommodations are implemented in a timely fashion.

**Tutoring:**

**Contact the ATTIC at (678) 915-7361 (It is free).**

**Suggested** Homework Problems from Chemistry (**8th Ed.**), Zumdahl:

Ch 1: 29, 31, 33, 35, 37, 39, 49, 53, 63, 65

Ch 2: 41, 47, 51, 53, 57, 59, 61, 63, 65, 67, 69, 71, 75, 77

Ch 3: 33, 35, 43, 45, 47, 49, 51, 53, 61, 67, 73, 75, 77, 79, 83, 89, 93, 95, 99, 101, 109, 113, 117, 119

Ch 4: 15, 19, 21, 23, 27, 29, 33, 35, 37, 39, 43, 45, 47, 49, 51, 57, 65, 69, 73, 77, 79, 81, 83

Ch 5: 25, 27, 35, 41, 45, 49, 51, 53, 59, 61, 63, 65, 73, 75, 77, 79, 81, 85, 87, 89, 99 (c & d @ constant T), 101

Ch 6: 13, 15, 17, 19, 27, 31, 33, 35, 37, 41, 43, 47, 49, 51, 53, 57, 59, 63, 67, 69, 71, 79, 81, 83

Ch 7: 5, 12, 21, 25, 29, 37, 39, 41, 45, 51, 67, 69, 71, 75, 77, 79, 81, 93, 97, 99, 101, 103, 109, 119, 125, 143

Ch 8: 7, 15, 17, 19, 21, 27, 29, 31, 33, 35, 37, 39, 45, 49, 51, 53, 55, 63, 65, 69, 71, 73, 79, 81, 83, 85, 87, 97, 103, 105, 107, 109, 11, 113, 115

Ch 9: 1, 5, 6, 19, 23, 25, 27 (Ch 8 Ex 107 & 109), 31, 35, 37