**CHEMISTRY 1212**  
**Fall 2014**

Section 01: 12:00 - 12:50 Mon., Wed., Fri. Room G-235  
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<th>Test</th>
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| 1    | Chapter 9 Covalent Bonding: Orbitals  
      | Chapter 10 Liquids and Solids | Fri., Sept. 5 | 9 |
| 2    | Chapter 11 Properties of Solutions  
      | Chapter 12 Chemical Kinetics | Fri., Sept. 26 | 8 |
| 3    | Chapter 13 Chemical Equilibrium  
      | Chapter 14 Acids and Bases | Fri., Oct. 17 | 8 |
| 4    | Chapter 15 Acid-Base Equilibria  
      | Chapter 16 Solubility and Complex Ion Equilibria | Fri., Nov. 7 | 8 |
| 5    | Chapter 17 Spontaneity, Entropy, and Free Energy  
      | Chapter 18 Electrochemistry | Mon., Dec. 1 | 8 |
|      | Comprehensive Final Exam | TBA |  |

**Grade Distribution**  
 **Grading Scale**

- Hour Quizzes (Best 4 of 5)  
  - 65%  
  - A 90-100
- Homework  
  - 10%  
  - B 80-89
- Attendance  
  - 5%  
  - C 70-79
- Comprehensive Final Exam  
  - 20%  
  - D 60-69
-  
  - F < 60

**Learning Outcomes**

Upon successful completion of this course, students will be able to

- understand concepts of bonding as applied to hybridization theory
- explain the intermolecular attractive forces that determine the properties of the states of matter and phase behavior.
- understand colligative properties and their use in determining the characteristic of solutions.
- write equilibrium constant relationships, determine whether equilibrium has been established and calculate equilibrium concentrations including applications of equilibrium concepts to precipitation and solubility.
• use LeChatelier’s Principle to predict the effects of concentration, pressure and temperature changes on equilibrium mixtures.
• describe how reaction mechanisms are determined; carry out chemical kinetics calculations, state how rate and equilibrium properties are related.
• understand Bronsted-Lowry, Arrhenius and Lewis acid-base theory including pH calculations and buffer action.
• understand and perform calculations with the thermodynamic functions, enthalpy, entropy, free energy; describe how chemical equilibria depend on $\Delta H$, $\Delta S$, and $\Delta G$ .
• differentiate between galvanic and electrolytic electrochemical cells; determine standard and non-standard cell potentials.

CHEM 1211 is prerequisite for this course. Regular attendance is required. Please note that should you miss class for any reason, you are responsible for all material discussed in class.

You must pass the laboratory and take the final examination to receive course credit.


**NO MAKE-UPS FOR HOURLY QUIZZES WILL BE GIVEN.** If you have to miss an hourly quiz for any reason, you will receive a zero for that quiz.

**Students with Disabilities:** Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the counselor working with disabilities at (678) 915-7244 as soon as possible to better ensure that such accommodations are implemented in a timely fashion. Information on Disabilities Services can be found at [http://www.spsu.edu/attic/Dis_Svcs.html](http://www.spsu.edu/attic/Dis_Svcs.html)

**Academic Integrity:** The SPSU Honor Code and procedures relating to academic misconduct may be found at [http://spsu.edu/honorcode/](http://spsu.edu/honorcode/).

The last day to withdraw from a class without penalty is Thursday, Oct. 2. Sept. 1 is Labor Day Holiday. Nov. 26 - 30 is Thanksgiving Holiday.

**Homework problems** are assigned. Similar or identical problems may appear on each test.

**HOMEWORK:**
Chapter 9: 24, 28, 34, 36, 38, 40, 42, 48, 50, 56
Chapter 10: 34, 38, 44, 52, 68, 76, 80, 92, 96, 102, 104
Chapter 11: 30, 34, 40, 44, 50, 52, 54, 56, 60, 64
Chapter 12: 26, 28, 30, 32, 34, 36, 44, 46, 48, 56, 60, 62
Chapter 13: 22, 26, 30, 32, 34, 40, 44, 46, 52, 58, 64, 66
Chapter 14: 34, 36, 42, 44, 48, 54, 62, 72, 76, 82, 86, 88, 98, 112, 118, 134
Chapter 15: 18, 22, 24, 32, 36, 40, 46, 50, 52, 60, 64
Chapter 16: 22, 26, 30, 36, 38, 46, 50, 54, 62, 66
Chapter 17: 28, 30, 32, 38, 42, 50, 54, 56, 60, 64, 66
Chapter 18: 30, 32, 36, 40, 44, 46, 54, 58, 66, 72, 86, 90, 104