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| Course Title/Number | <b>Principles of Chemistry II / CHM 212, Section 203</b>  |
| Semester/Year       | Spring 2014   |
| Days/Time           | 12:00-12:50 AM MWF  |
| Location            | 473 Science Hall  |
| Instructor          | Dr. Bin Wang  |
| Office              | 241L Byrd Biotechnology Science Center  |
| Phone               | (304) 696-3456  |
| Email               | <a href="mailto:wangb@marshall.edu">wangb@marshall.edu</a>  |
| Office Hours        | 1:00-3:00 PM MWF, or by appointment   |
| University Policies | By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to <a href="http://www.marshall.edu/academic-affairs">www.marshall.edu/academic-affairs</a> and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <a href="http://www.marshall.edu/academic-affairs/?page_id=802">http://www.marshall.edu/academic-affairs/?page_id=802</a><br>Academic Dishonesty / Excused Absence Policy for Undergraduates / Computing Services Acceptable Use / Inclement Weather / Dead Week / Students with Disabilities / Academic Forgiveness / Academic Probation and Suspension / Academic Rights and Responsibilities of Students / Affirmative Action / Sexual Harassment |

### **Course Description:**

A continuation of CHM 211 with emphasis on the inorganic chemistry of the representative elements and transition metals. 3.00 credits. Prerequisite: grade of C or better in CHM 211

### **Required Texts, Additional Reading, and Other Materials**

1. *Chemistry: The Science in Context, Third Edition* by Thomas R. Gilbert, Rein V. Kirss, Natalie Foster, and Geoffrey Davies; W. W. Norton & Company, Inc.
2. SmartWork access for the textbook
3. access to MU Online and a Marshall email account
4. non-programmable calculator for quizzes, tests, and exams (it must not have keys for the alphabet)
5. #2 pencil and ink pen for tests/quizzes

| <b>Student Learning Outcomes</b>   | <b>How students will practice each outcome in this course</b>   | <b>How student achievement of each outcome will be assessed in this course</b> |
|--|---|--|
| Students will identify and explain trends in physical and chemical properties.                                 | <ul style="list-style-type: none"> <li>• lectures</li> <li>• textbook readings</li> <li>• homework</li> </ul> | <ul style="list-style-type: none"> <li>• tests and quizzes</li> </ul>          |
| Students will understand how the energy of a system governs the rate and extent of chemical reactions.         | <ul style="list-style-type: none"> <li>• lectures</li> <li>• textbook readings</li> <li>• homework</li> </ul> | <ul style="list-style-type: none"> <li>• tests and quizzes</li> </ul>          |
| Students will understand how the relative amounts of chemical species govern the rate and extent of reactions. | <ul style="list-style-type: none"> <li>• lectures</li> <li>• textbook readings</li> <li>• homework</li> </ul> | <ul style="list-style-type: none"> <li>• tests and quizzes</li> </ul>          |
| Students will apply mathematical techniques to formulate and solve problems in chemistry.                      | <ul style="list-style-type: none"> <li>• lectures</li> <li>• textbook readings</li> <li>• homework</li> </ul> | <ul style="list-style-type: none"> <li>• tests and quizzes</li> </ul>          |

### **Grading Policy**

|  |             |                     |
|--|-------------|---------------------|
| homework   | 200         | points              |
| quizzes  | 50          | points              |
| tests (4 during the semester)  | 500         | points              |
| final exam   | 250         | points              |
|  | <b>1000</b> | <b>TOTAL POINTS</b> |
| <b>Grading Scale:</b> A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: 0-59%            |             |                     |
| The percentage of total points earned will be rounded up the nearest whole percentage. |             |                     |

### **Attendance Policy**

Attendance is not required but is highly recommended. In general, missed assignments and exams may not be made up except in the case of an excused absence, according to university policy. In the case that class is cancelled due to inclement weather or an emergency on the day of a scheduled test, the test will be given in the next scheduled class period. If student tardiness becomes a distraction during lecture, the instructor reserves the right to refuse admission to tardy students.

### Miscellaneous Policies

Please silence cell phone ringers during class or exams. The instructor reserves the right to answer any ringing cell phones during lecture, or to dismiss the offending student. Use of cell phones / PDAs / MP3 players and similar devices during tests, quizzes, and exams will be considered academic dishonesty. Recording of lectures without the instructor's permission is prohibited. Laptops should not be used during class without permission. The content of this course will adhere closely to the information contained in the textbook. You may use other resources (alternate texts, notes from other professors, etc.). If you find information that contradicts something written in the textbook or said in the lecture, please consult Dr. Wang. Class announcements may occasionally be made via email to your university email address. Please check it on a regular basis. Lecture slides will be posted at MU Online.

### Approximate Course Schedule

| Week of:                       | Chapter  | Topic                            |
|--------------------------------|--|----------------------------------|
| 1/13                           | 10, 11   | Intermolecular Forces, Solutions |
| 1/20                           | no class on 1/20; 11                                       | Solutions                        |
| 1/27                           | 14   | Thermodynamics                   |
| 2/3                            | 14; TEST 1 (10, 11, 14) on 2/5; 15                         | Thermodynamics; Kinetics         |
| 2/10                           | 15   | Kinetics                         |
| 2/17                           | 16   | Equilibrium                      |
| 2/24                           | 16; TEST 2 (15, 16) on 2/28                                | Equilibrium                      |
| 3/3                            | 17   | Aqueous Equilibrium              |
| 3/10                           | 17   | Aqueous Equilibrium              |
| 3/17                           | Spring Break   |                                  |
| 3/24                           | 18   | Transition Metals                |
|                                | 3/28 is last day to drop a full semester individual course |                                  |
| 3/31                           | 18; TEST 3 (17, 18) on 4/4                                 | Transition Metals                |
| 4/7                            | 19   | Electrochemistry                 |
| 4/14                           | 19   | Electrochemistry                 |
| 4/21                           | 21   | Nuclear Chemistry                |
| 4/28                           | 21; TEST 4 (19, 21) on 4/30; Review                        | Nuclear Chemistry, Review        |
| <b>5/3 SATURDAY FINAL EXAM</b> |  |                                  |