Inorganic Chemistry (240)

Spring Semester 2012

Instructor: Dr. Richard Holz (E-mail: Rholz1@luc.edu) Office: 420 Flanner Hall

Lectures: MWF 9:20-10:10 AM in Cuneo 311.

Office Hours: Th 1:30-2:20 PM or by prior arrangement.

Text book: The required text is "Basic Inorganic Chemistry" by Cotton, Wilkinson, and Gaus, 3rd Ed.

Course content: The material covered in this course and approximate dates are given in the course outline. Some sections in certain chapters will be skipped or may be covered out of order. You will not be responsible for material that is not covered in class. The prerequisites for this course are General Chemistry 102 or 106.

Problem sets: You should work all of the assigned problems at the end of each chapter. You should also work as many additional problems at the end of the chapters as you need to grasp the concept. You will be responsible for the example problems in each chapter. These problem sets will not be collected; however, if you have not worked a sufficient number of the assigned problems and cannot work them without help, the exams will seem difficult. The answers to all of the assigned problems will be placed on Blackboard.

Exams: Three one hour exams will be held on Fridays at the normal class times. Exams will be composed of problems that are similar to those worked in class, the book example problems, and those assigned at the end of each chapter. There will be *no* make-up exams. If you have a major problem (a written medical excuse, etc.) and you absolutely *must* miss an exam please see me *in advance*, if possible, to discuss your situation. The final examination, which is comprehensive, is scheduled for Saturday, May 4, 2013 at 1:00 PM. It is official university policy that unless you have three examinations on this day, you must take the final exam at this time. Permission to take the final exam at another time for any other reason must be obtained from the Dean of the College of Science.

Grading: Grades will be assigned according to the results of three one hour exams and a two hour final examination.

Exam I	100 pts.
Exam II	100 pts.
Exam III	100 pts.
Comprehensive Final Exam	200 pts.
Total	**500 pts.**

Grading will be assigned as follows: A = 90%, B = 80%, C = 70%, D = 60%.

Course Withdrawal: Anyone may withdraw from Chem. 240 without academic penalty through Monday, March 25.

General Information: In accordance with the Americans with Disabilities Act, reasonable accommodations will be provided for all persons with disabilities in order to ensure equal participation in Chem. 240. In cooperation with the Services for Students with Disabilities, reasonable

accommodation will be provided for students with disabilities. Please meet with the instructor during the first week of class to make arrangements.

Academic Integrity: Please refer to the policies on dishonest academic behavior in the Graduate or Undergraduate Studies Catalogs (for details see www.luc.edu/academics/catalog/undergrad/reg_academicgrievance.shtml).

Learning Objectives: General course learning objectives include:

1. Integrate skills involving scientific methodology.
2. Use evidence to support a claim.
3. Analyze key facts as outlined during the course.
4. Compare and contrast the vocabulary of inorganic chemistry.
5. Ability to analyze chemical and physical properties of inorganic molecules.
6. Be able to distinguish chemical and physical properties of inorganic molecules based on structure and bonding.
7. Relate structure and bonding to function.
8. Provide macroscopic and microscopic descriptions of inorganic reaction mechanisms.
9. Get an A in the course!

Chemistry 351 Course Outline

Monday	Tuesday	Wednesday	Thursday	Friday
Jan. 14 Classes Begin		**Jan. 16** CH 1: Review. **Problems:** 1-5, 8, 9, 11, 12, 17		**Jan. 18** CH 2: Electronic Structure of Atoms. **Problems:** 1-10, 12, 13, 15, 16.
Jan. 21 Martin Luther King, Jr., Holiday **No Class**		**Jan. 23** CH 2: Electronic Structure of Atoms.		**Jan. 25** CH 3: Structure and Bonding. **Problems:** 1-18, 21
Jan. 28 CH 3: Structure and Bonding.		**Jan. 30** CH 3: Structure and Bonding.		**Feb. 1** CH 3: Structure and Bonding.
Feb. 4 Study Day No Class		**Feb. 6** **EXAM I** CH 1-3		**Feb. 8** CH 4: Ionic Solids **Problems:** 1-9, 13
Feb. 11 CH 4: Ionic Solids		**Feb. 13** CH 4: Ionic Solids		**Feb. 15** CH 5: The Chemistry of Selected Anions. Problems: **1-10, 6B**
Feb. 18 CH 5: The Chemistry of Selected Anions.		**Feb. 20** CH 6: Coordination Chemistry **Problems:** 1-8, 11-15, 17-19.		**Feb. 22** CH 6: Coordination Chemistry

Feb. 25 CH 6: Coordination Chemistry		**Feb. 27** **Review CH 4-6**		**March. 1** **EXAM II** CH 4-6.
March 4 Spring Break No Class		**March 6** Spring Break No Class		**March 8** Spring Break No Class
March 11 CH 23: Introduction to Transition Metals **Problems:** 1-8, 11, 13-16		**March 13** CH 23: Introduction to Transition Metals		**March 15** CH 23: Introduction to Transition Metals
March 18 CH 23: Introduction to Transition Metals		**March 20** CH 23: Introduction to Transition Metals		**April 22** CH 23: Introduction to Transition Metals
March 25 CH 28: Metal Carbonyls. **Problems:** 1-9, 11, 13-16.		**March 27** CH 28: Metal Carbonyls.		**March 29** Review CH 23 & 28.
April 1 **EXAM III** CH 23 & 28		**April 3** CH 29: Organometallics. **Problems:** 1, 2, 9, 19.		**April 5** Easter Break No Class
April 8 Easter Break No Class		**April 21** CH 29: Organometallics.		**April 23** CH 29: Organometallics
April 15 CH 29: Organometallics.		**April 28** CH 31: Bioinorganic Chemistry **Problems:** 1-8, 10-12		**April 30** CH 31: Bioinorganic Chemistry
April 22 CH 31: Bioinorganic Chemistry		**April 28** CH 31: Bioinorganic Chemistry		**April 30** CH 31: Bioinorganic Chemistry
April 29 Nano Chemistry		**April 28** Nano Chemistry		**April 30** Review CH 1-6, 23, 28, 29, 31
May 4 **Final Exam** 1:00 to 3:00 PM CH 1-6, 23, 28, 29, 31				