

**ADVANCED INORGANIC CHEMISTRY
CHEMISTRY 340 & 441 (#2214 & 2219)
SPRING 2006**

Instructor: Dr. Herlinger
Office: FH-418
Phone: 508-3127 or aherlin@luc.edu
Hours: T Th 5:15-6:00, other times by appointment

Required textbook:

“Inorganic Chemistry”, Gary L. Miessler and Donald A. Tarr, third edition, Prentice Hall, Upper Saddle Rive, NJ, 2004. ISBN 0-13-035471-6.

Meetings (30):

Lecture is scheduled for two meetings per week, Tuesdays and Thursdays at 4:00-5:15 PM in FH-105.

Course Description:

A three credit hour lecture course in advanced inorganic chemistry. The course involves the study of atomic structure and bonding, symmetry and group theory, main group chemistry, modern acid and base theories, and the structure, bonding and electronic spectra of coordination compounds. Selected topics concerning inorganic reaction mechanisms and organometallic chemistry will be presented as time permits.

Grading:

Three 75 minute examinations of equal weight, i.e., 90 points each, will constitute 90% of the course grade. The remaining 10% will be from three 15 minute quizzes worth 10 points each. The quizzes and exams will be given during the semester as scheduled below. The final course grade will be determined according to the scale:

<u>Letter Grade</u>	<u>Numerical Score (%)</u>
A	100-86
B	85-71
C	70-56
D	55-41
F	<40

SCHEDULE OF TOPICS

<u>TOPIC</u>	<u>READING</u>
Introduction to Inorganic Chemistry	Chapter 1
Atomic Structure	Chapter 2
Simple Bond Theory	Chapter 3
Symmetry and Group Theory	Chapter 4
Molecular Orbital Theory	Chapter 5
Acid-Base & Donor-Acceptor Chemistry	Chapter 6
The Crystalline Solid State	Chapter 7
Coordination Chemistry I: Structure	Chapter 9
Coordination Chemistry II: Bonding	Chapter 10
Coordination Chemistry III: Spectra	Chapter 11

QUIZ, EXAMINATION AND SPRING BREAK SCHEDULE

1/31	Quiz 1 – Tuesday
2/21	Exam 1 – Tuesday
3/6-10	Spring Break – No Classes
3/16	Quiz 2 – Thursday
4/11	Exam II – Tuesday
4/27	Quiz 3 – Thursday
5/13	Exam III – Saturday – 11:00 am – 1:00 pm

End-of-Chapter Problems:

Students who are making good progress in the course should be able to solve, independently, most or all of the end-of-chapter problems in the textbook. Exemplary problems are given for each chapter. Students should attempt these problems, but they need not be submitted for grading. Solution for the assigned problems will be posted in the display case on the fourth floor of Flanner Hall across from the elevator.

Chapter 2: 3, 6, 10, 11, 13, 15, 20, 23, 24, 26

Chapter 3: 2, 5, 6, 7, 8, 15, 17, 18, 21, 24

Chapter 4: 2, 5, 8, 10, 11, 14, 15, 16, 19, 23

Chapter 5: 4, 5, 9, 10, 13, 16, 21, 22, 23, 24

Chapter 6: 1, 4, 7, 10, 11, 20, 21, 23, 26, 28

Chapter 7: 3, 4, 8, 9, 10, 11, 13, 14, 16, 17

Chapter 9: 5, 6, 7, 8, 9, 10, 14, 17, 18, 19

Chapter 10: 2, 9, 11, 12, 13, 14, 16, 17, 19, 20

Chapter 11: 3, 4, 7, 8, 9a-d, 12, 14, 17, 22, 27a-c