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Required Text: Chapters in **INORGANIC CHEMISTRY**, by Miessler & Tarr, Prentice Hall, New Jersey, 4th Edition, 2011, and Student Solutions Manual to accompany the textbook.

Recommended Additional Text: **ADVANCED INORGANIC CHEMISTRY**, by Cotton, Wilkinson, Murillo & Bochmann; John Wiley & Sons, Inc., New York, 6th Edition, 1999.

*Classes are met every MWF in FW 201 (La Tourette Hall) from 10:00 - 10:50 AM
Office Hours: MWF from 11:00 – 12:00 NOON*

January 19 - February 16

Part 1: Foundations (Concepts in Chemical Bonding and Stereochemistry; Chapters 1-5)

Special emphasis on Molecular Orbital Theory, Molecular Symmetry and the Symmetry Groups.

February 18: (EXAM I)

February 21 – March 11

Part 2: Advanced Topics-1 (Introduction to Ligands and Complexes; Chapters 6, 9 & 10)

Ligand Substitution Processes with emphasis on Square-Planar Substitution and Octahedral Substitution Reactions in Inorganic Chemistry.

March 12-20: SPRING BREAK

March 21 – April 04

Part 3: Advanced Topics-2 (Fundamental Concepts: Transition Metal Complexes, Chapt. 11 & 12)

Special emphasis on Crystal-Field and Ligand-Field Theories, Electronic States and Spectra.

March 28: (EXAM II)

April 06 – May 04

Part 4: Advanced Topics-3 (Organometallic, Bioinorganic & Environmental Chemistry Chapters 13 - 16)

Synthesis, Structures, Bonding, and Reactivity of Organometallic & Bioinorganic Compounds including Carboranes and Metallacarboranes, and their Applications in Catalysis, Medicine and Pollution Control.

NO CLASSES ON FRIDAY, MAY 06 (READING DAY)

FINAL EXAM: MONDAY, MAY 9, 2011, 10:00 – 11:50 AM

GRADING: Each lecture and the exam will be graded by other students in the class (50% of the Total only) and by the Instructor (50%) independently. In order to avoid more than $\pm 5\%$ discrepancy of grading between the students and the instructor, each grading will be monitored (A penalty of 10 points each will be made to the grader if it happens!). Lecture Presentations can either be in PowerPoint, Chalkboard or Transparency media. There are THREE EXAMS including the FINAL. A maximum of 10 questions from the book will be picked by each student who taught the chapter and/or a portion of it and the instructor will selectively chose some of them (approx. 6-8) to set the

EXAM. *If the student is consistently refraining in asking questions and/or in writing constructive criticisms on the evaluation sheet(s), a 10-point penalty will be computed, in addition to a penalty of 10 points for each missing lecture.*

Lecture Presentations: 100 (students) + 100 (instructor) = 200 points

Three Exams: 3 x 100 (students) + 3 x 100 (instructor) = 600 points

TOTAL POINTS = 800 (Letter Grading Scale: 720 = A; 640 = B; 560 = C; 480 = D; <480 = F)

Any student who may need an accommodation due to a disability, please make an appointment to see me during my office hours, or when convenient. A letter from Disability Support Services (CAAR) authorizing your accommodations is usually needed before accommodations can be granted.

Lecture Presentation Schedule

Chapters 1	January 19	<i>Overview of Inorganic Chemistry (Intro)</i>	Hosmane
Chapter 2	Jan 21, 24	<i>Atomic Structure</i>	Bicakcic, Burgie
Chapter 3	Jan 26, 28, 31, Feb 02	<i>Simple Bonding Theory</i>	Carrick, Delegge, Droskiewicz, Durfey
Chapter 4	Feb 04, 07, 09	<i>Symmetry and Group Theory</i>	Eabron, Hartnett, Jaderberg
Chapter 5	Feb 11, 14, 16	<i>Molecular Orbitals</i>	Kelder Jr., King, Le,
Chapter 6	Feb 21, 23, 25	<i>Acid-Base & Donor-Acceptor Chemistry</i>	Lusardi, Matic, McNally
Chapter 9	Feb 28, Mar 02, 04	<i>Coord. Chem. I: Structures and Isomers</i>	McNamara, Mcinerney, Miao
Chapter 10	Mar 07, 09, 11	<i>Coord. Chem. II: Bonding</i>	Muller, Myslinski, D & J
Chapter 11	Mar 21, 23, 25	<i>Coord. Chem. III: Electronic Spectra</i>	Northam, Norton, Patel Ami & Hemal
Chapter 12	Mar 30, Apr 01, 04	<i>Coord. Chem. IV: Reacts. & Mechanisms</i>	Nilay Patel, Peter, Phillips
Chapter 13	Apr 06, 08, 11	<i>Organometallic Chemistry</i>	Saidat, Schiffer, Shah
Chapter 14	Apr 13, 15, 18	<i>Organometallic Reactions & Catalysis</i>	Sharma, Stanley, Stoa
Chapter 15	Apr 20, 22, 25, 27	<i>Main Group/Organometallics Parallels</i>	Sudzum, Sullivan, Tempel, Tracy
Chapter 16	Apr 29, May 02, 04	<i>Bioinorganic & Environmental Chem.</i>	Wroblewski D & N., Young

Grading Guidelines for Lecture Presentation

In-Class Presentation

CHEM 460/560-0001

Spring Semester 2011

Presenter (Name):

Evaluator (Name):

Chapter Topic:

Maximum Points: 100

Overall Effectiveness of the Presentation (5 Points Maximum):

Materials/Contents Presented (70 Points):

Structures/Drawings/Figures/Schemes/Tables Used or Shown (5 Points Maximum):

Presentation Media (PowerPoint/Chalk Board/Doc Camera) (5 Points Maximum):

Responses to Questions (15 Points Maximum)

Overall Points (100 Points Maximum):

Date:

Signature:

Critical Comments (Below):