

Chemistry 502

Advanced Inorganic Chemistry II

SYLLABUS Spring 2012

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Text: Douglas, McDaniel and Alexander: *Concepts and Models of Inorganic Chemistry*, 3rd Ed.

This course will deal primarily with the chemistry of transition metals and transition metal complexes. Particular emphasis will be placed on magnetic, electronic and thermodynamic properties, reactivities, reaction mechanism, structure, bonding and general features.

Material covered will be taken from the following chapters of DM&A:

Chapt. 8	Oxidation-Reduction Reactions
Chapt. 3,4	Symmetry (Group Theory) Discrete molecules
Chapt. 9	Models and Stereochemistry of Coordination Compounds
Chapt. 10	Spectra and Bonding of Coordination Compounds
Chapt. 11	Reaction Mechanisms of Coordination Compounds
<i>Chapts. 12-14</i>	<i>Organometallic Chemistry</i>
<i>Chapt. 15</i>	<i>Chemistry and Periodic Trends among the Metals</i> <i>(Student Presentations)</i>

Grading will be based on two exams and a final (Thursday May 3 @8 AM), several homework assignments, a short report, and classroom presentation.

Some other Useful Texts:

Cotton: Chemical Applications of Group Theory

Lewis/Wilkins: Modern Coordination Chemistry

Wilkins: Kinetics and Mechanism...

Day/Selbin: Theoretical Inorganic Chemistry

Basolo/Pearson: Mechanisms of Inorganic Reactions

Cotton & Wilkinson: Advanced Inorganic Chemistry

(6th ed with Murillo & Bochman : earlier editions are stronger on principles)

Figgis: Introduction to Ligand Fields (Now Figgis & Hitchman)

The above are some of the "classics" to which I will often refer. There are a number of other good texts and monographs in the URI library and in my office.