

Chemistry 6500
Spring 2008
Reactivity and Mechanism in Inorganic Chemistry

PROF. JOHN L. HUBBARD

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PREREQ: Physical Chemistry, Chem 5520 or equivalent

MEETINGS: Arranged

TEXT: no official text; recommended references: *Advanced Inorganic Chemistry* (Cotton/Wilkinson) Huheey, Housecroft, Primary Literature

EXAMS: 2 Take-home format exams: Exam #1: (**35%** of total grade); Exam #2 (Comprehensive Final):(**55%** of total grade). **10% of your grade** will be based on your critical assessment of a short paper of your choice from the inorganic literature of the past 5 years. Selected papers must be approved by JLH by no later than **Feb 15**. The paper will also be given orally to the class during the last week of the semester (30 minute format each).

AGENDA: The purpose of the course is to survey inorganic synthesis and reactivity for both the main group elements and the transition elements. When possible, attention will be directed toward mechanistic details. Part of the weekly lectures will touch on a general introduction to the topics listed below. Readings from the recommended texts will be designated. The remaining class time will be devoted to specific papers in the literature. Copies of selected articles discussed in class will be provided in advance. Copies of these papers will be made available on the **BlackBoard** website. With the small class size, I expect students to be prepared (i.e., have read the papers before class) in order to have lively discussions of the material and some problem solving activities.

<u>Week</u>	<u>Topic</u>
1	Hydrogen and hydrides
2	Group I, IIb Elements
3	Group III Elements
4	Group IV Elements
5	Group V Elements
6	Group VI Elements
7	Group VII Elements
8	Noble Gas Compounds
9	Transition Metal Carbonyls, Nitrosyls
10	Metal Alkyl, Alkylidene, Alkylidyne, olefin, Alkyne Complexes
11	Agostic Interactions, C-H Activation
12	Ziegler Catalysis
13	Other Transition Metal Catalyzed Reactions
14,15	Papers from students

NOTE:

If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource center. In cooperation with the Disability Resource Center, course material may be provided in alternative formats---large prints, audio, diskette, or Braille, upon request.