

**CHEM 5341: Advanced Inorganic Chemistry I**  
**Spring 2006: T/R 8:00 to 9:15 am**  
**Rm. CBW 1.201**

**Instructor:** Gregg R. Dieckmann (Dr. D)    Office: BE 2.522    Phone: 972-883-2903  
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**Text (required):** *Inorganic Chemistry, 3<sup>rd</sup> Edition*, Gary L. Miessler and Donald A. Tarr

**Supplemental text (not required):** *Molecular Symmetry and Group Theory, 2<sup>nd</sup> Edition*  
by Alan Vincent

**Office Hours:** T/R, 9:15 – 10:30 am / open door

**Objectives:** This course is a one semester offering and provides students with a foundation of basic inorganic chemistry principles and a working knowledge of how to use them. It begins with a thorough treatment of atomic structure, bonding theories and molecular symmetry / group theory. Much of the remaining semester concentrates on coordination chemistry, including its history, coordination compound nomenclature and isomerism, crystal and ligand field theories, spectroscopy, kinetics and thermodynamics. The semester ends with a survey of organometallic chemistry and reactions, and bioinorganic chemistry (time permitting). A major goal of the course is to develop skill sets that lead to an understanding and appreciation of the tremendous variety of chemistry demonstrated by the elements in the periodic table.

**Topics Schedule:**

	<b>Topics</b>	<b>Chapters</b>
Unit 1/Exam 1*	Atomic Structure Simple Bonding Theory Symmetry/Group Theory Molecular Orbital Theory	2 3 4 5
Unit 2/Exam 2*	Coordination Chemistry I: Structures and Isomers Coordination Chemistry II: Bonding Coordination Chemistry III: Electronic Spectra	9 10 11
Unit 3/Exam 3*	Coordination Chemistry IV: Reactions / Mechanisms Organometallic Chemistry Bioinorganic Chemistry	12 13 16

\*Dates to be announced at least a week in advance.

**Course Grading:**

Exams:	3 x 20% =	60%
Homework/quizzes:	20% =	20%
Final Exam:	20% =	20%

**Homework:**

- assigned from sections that we cover
- should be worked on individually

**Quizzes:**

- periodic (given during class times)
- given during class times

**Exams:**

- given during class times (Dates to be announced at least a week in advance)

**NOTE:** You must have a university excuse for missing a quiz or exam or your grade will be a zero.

**There are no make-up exams or quizzes.** If your absence is excused, notify me as possible so that provisions can be made for a grade for the missed work.

**Attendance:** You are a graduate student = you are expected to attend this class.