Chemistry 311, Advanced Inorganic Chemistry
Spring 2017

Instructor: Dr. Jason Overby
Office: SSMB 318
Office Hours: MW 10-12, TTh 9:30-10:30, others by arrangement
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Description of Course

An advanced course that aims to provide a balanced view of
the theoretical principles involved in present-day inorganic
research. Topics include atomic structure, chemical bonding,
coordination chemistry, symmetry and applications,
organometallic chemistry, and chemistry of the main group
elements.

Co-requisites and prerequisites

Chem 232

Materials

Inorganic Chemistry, 5th Edition, Miessler & Tarr (optional)
Chemistry 311 Class Pack, 12th Edition (required)
Sapling (required)

You must buy class pack.
The textbook is optional.
Yes it is helpful.

Supplemental materials

Please visit OAKS for up-to-date information concerning the
course. Copies of the syllabus, handouts and exam info will be
posted there as well as other important information related to
the course.

Learning Objectives
After completing the course, you should be able to do the following:

Understand the quantum mechanical nature of atoms and molecules including bonding and molecular geometry
Use symmetry and group theory to understand point groups as well as apply this knowledge to spectroscopy
Know the principles of molecular orbital theory
Be able to understand the principles of Lewis acids and bases
Understand the structure of solid state materials including defects and bonding
Know the fundamentals of coordination chemistry including bonding and reactivity
Understand the basic ideas of organometallic chemistry including electron counting, bonding, and the major types of reactions, particularly those used in catalysis
Know the major roles of metal species in biological species as well as understand the role of metals in the environment

Class policies

Attendance at all class meetings is expected. You are expected to budget your time wisely and meet your obligations for this class. Experience has demonstrated that there is a strong correlation between your grade in the class and your attendance. You are responsible for learning the material when you miss class. My time in office hours is not for catching you up on material you missed. In the event you miss a lecture period, please check the webpage for a synopsis of that day’s lecture.

Attendance is good.
Being present helps you learn
but not required.

Grading Scheme
Grading Policies

It is not my policy to allow make-up examinations. In the event you do have to miss an examination, you must notify me as soon as possible so suitable accommodations can be made. If you fail to confer with me concerning a missed examination, you will receive a zero for that examination.

Problem sets will be administered electronically and deadlines are firm. The possibility for deadline extensions does not exist except only in truly unusual circumstances. Ample time to complete the online problems will always be given.

The Honor system is in effect in all your efforts for this course. Cheating will not be tolerated. If you are caught cheating, a grade of “F” will automatically be given and you will be brought before the Honor Board. Please refer to the Department's policy on Scientific Integrity for more information. By

Grading scale is fixed. All rules of rounding followed. There is not a curve.

Problem sets given. The deadlines are set in stone. One week to do them.

Honor system, yes! Do not cheat! You will get F! Just try me and see.
enrolling in this course, you are agreeing to abide by the Departmental policy on Scientific Integrity.

Examination Schedule

| There are three exams given over the course of the semester. The dates of the exams are flexible but you will always be given at least one week’s notice before any of the in-class exams. |
| Exams are spread out. You will know when they will be. I will tell you when. |

Final Examination Information

The final examination will be given during the normally scheduled time (Wednesday, April 27 at 9 am). The exam will be similar in format to a regular lecture examination and will not be comprehensive; it will only cover material from the third examination and beyond.

Important Dates

January 16 – Martin Luther King, Jr. Holiday
March 5-12 – Spring Break
March 23 – Last day to withdraw from classes with the grade of “W”
April 21 – Last day of classes
May 2 – Final examination, 9 am