**Chemistry 5110: Inorganic Chemistry**

**Text**: Douglas, McDaniel, and Alexander, *Concepts and Models of Inorganic Chemistry*. 3rd edition, Wiley, 1994

**Grading:** The grade for the course will be determined from;

Two hour exams (100 points each) 50%

Homework assignments (100 points total) 25%

Final exam (100 points) 25%

**Grading scale:**

A >90

A- 89-85 C 64-60

B+ 84-80 C- 59-55

B 79-75 D 54-50

B- 74-70 F <50

C+ 69-65

The course will follow the outline of the text with supplemental readings assigned from the literature. These and the homework assignments will be made at the appropriate times in class. We will cover the first eight chapters, omitting chapter 6, and include selected material from chapters 9-12. Exams will be announced at least two weeks in advance. The class format will be mostly lecture format. However, questions and discussion are encouraged during class and outside of class.

**References.**

1. F. Albert Cotton, Chemical Applications of Group Theory. 3rd edition, Wiley Interscience, 1990. This is the most authoritative and complete text on symmetry and Group theory. Easily readable. 541.2C829 (1963).

2. F. A. Cotton and G. Wilkinson, Advanced Inorganic Chemistry, Wiley Interscience. Now in it 7th(?) edition. I have the 6th edition in my library. The Inorganic Chemist’s bible.

3. R. L. Flurry, Jr., Symmetry Groups: Theory and Chemical Applications. Prentice-Hall, 1980. A more rigorous and mathematically based treatment of symmetry and group theory.

4. William A Guillory, Introduction to Molecular Structure and Spectroscopy Allyn & Bacon, 1977.

5. S. F. A. Kettle, Symmetry and Structure: Readable Group theory for Chemists, 2nd edition, John Wiley, 1995. An easily read text. QD471.K47516

6. M. Orchin and H. H. Jaffee, Symmetry, Orbitals, and Spectra, Wiley-Interscience, 1971. Also an easily read text.

7. E. A. V. Ebsworth, D. W. H. Rankin, and S. Cradock Structural Methods in Inorganic Chemistry, Blackwell Scientific Publications, 1987. A non-mathematical treatment of the subject area of the course. This book focuses more on interpretation of spectra, less rigorously on theory. QD95.E29

8. K. Nakamoto, Infrared Spectra of Inorganic and Coordination Compounds. John Wiley & Sons. I have the 1963 edition, there are later editions. 535.84 N145

9. E. Joseph Billo, “Excel for Chemists”, 2nd ed.2001, Wiley-VCH is a valuable book for using Excel for Chemical Applications.

10. K. J. Klabunde, ed.., “Nanoscale Materials in Chemistry”, Wiley Interscience, 2001. A good introduction into nano chemistry.

11. Chapters on bonding in inorganic chemistry and structures of inorganic compounds, as well as many other aspects we cover, may be found in any current text of inorganic chemistry.