Syllabus Fall 2011

CHEM 4318
Physical Inorganic Chemistry

T, R 9:30 am – 10:50 am, SH 205

Professor Fred MacDonnell
Phone 272-2972
macdonn@uta.edu
CRB-302
Office Hours: M, W, R 11-12 pm or by appt.

The course will focus on physical chemistry of inorganic systems, such as simple coordination complexes, and will cover aspects related to structure and bonding models and their use in predicting physical properties and reactivity. The tools of molecular symmetry, MO theory, acid – base, and redox concepts will form the basis for our descriptions of inorganic systems. Initially we will focus on the structures, properties, and reactivity of coordination complexes and will then develop an understanding and picture of related bioinorganic systems.

Text:
Inorganic Chemistry, 4th Ed., Gary L. Miessler and Donald A. Tarr
Prentice-Hall Publishers, 2011.

The course is expected to complete:

Chapters 2 and 3:	This is largely review material. Please read before class begins. Some quick review will be done in class.
Chap 4 and 5:	Used to develop bonding models (MO theory and some spectroscopy)
Chap 6:	Acid-Base Theory. Simple MO concepts. HSAB Theory
Chap 9:	Coordination Complexes: Structure
Chap 10:	Bonding Models in Coordination Complexes
Chap 11:	Electronic Spectroscopy and correlation with Complex Electronic Structure
Chap 12:	Coordination Complexes: Reactivity and Redox Chemistry
Chap 16:	Bioinorganic Chemistry

If time allows some organometallic chemistry will be covered (Chap 13)

Supplemental Texts:

Inorganic Chemistry, 3rd Ed., D. F. Shriver, P. Atkins, C. H. Langford
1994, W. H. Freeman and Co., NY (On reserve SEL)

Concise Inorganic Chemistry, 5th Ed. J. D. Lee, 1996,
Chapman & Hall Publishers. (On reserve SEL)

Inorganic Chemistry, 4th Ed.,
J. E. Huheey, E.A. Keiter, R. L. Keiter (On reserve SEL)

Advanced Inorganic Chemistry, 5th Ed. (On reserve SEL)
F.A. Cotton, G. Wilkinson
John Wiley and Sons, NY

Grading and Exam Schedule: The grade will be based on 4 hour exams**,** homework, and a final exam. Your lowest hour exam score can be replaced by the final if it benefits you. End of chapter or other homework will be assigned and collected.

CHEM 4318

Exams	Grading
September 15 - First Hour Exam	17 %
October 11 - Second Hour Exam	17 %
November 8 - Third Hour Exam	17 %
December 1 - Fourth Hour Exam	17 %
Homework	7 %
December 15 - Final Exam (8-10:30 am)	25%
	100%

Academic Dishonesty

All students are expected to pursue their scholastic careers with honesty and integrity. Academic dishonesty will not be tolerated by the Department of Chemistry and Biochemistry. Academic dishonesty includes (but is not limited to) cheating, falsification of data, plagiarism, and contracting/collusion with others to take your test or do your work. Cheating is the use or acquisition of information (data, constants, formulas, textual material, etc.) from either unauthorized sources or in an unauthorized manner. Examples of cheating include, but are not limited to:

- exchanging information during a test or quiz.
- looking at another student's paper during a test or quiz.
- bringing information in any form into the test or quiz other than personal knowledge. This includes written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.).
- looking at a book or other unauthorized source during the test or quiz.
- accessing information by any electronic means (cellular phones, pagers, radios, etc.).

- processing data or information in an unauthorized manner using a programmable calculator or computer. In other words, unless you have received authorization, you are not permitted to use any computer program. This includes specialty computers or calculators in which the "programming" is built into the computer. You are permitted to use simple calculators in which arithmetic, logarithmic, and trigonometric functions are preprogrammed.

In the event that test proctors decide that a student is cheating, the following actions will be taken:

- the student will be notified and, if the situation merits, asked to explain their actions.
- the source of the unauthorized information will be removed during the remainder of the test period and returned to the student following the test, if appropriate.
- the student may be asked to move to a different location to complete the test.
- calculator/computer memory will be cleared of stored information and programs as appropriate. In some cases the proctor will need to examine temporarily the calculator/computer to verify unauthorized use. The calculator will be returned to the student to permit the student to finish the test.
- a record of the events and actions surrounding the alleged act of cheating will be submitted to the Associate Vice Provost for Student Affairs for further action. See the Undergraduate Catalog for further information.

Americans with Disabilities Act - students requiring special accommodations to ensure an acceptable learning environment should contact the instructor during office hours within the first week of class, if possible.