UTSA **CHE 4463** ***INORGANIC CHEMISTRY*** ***FALL 2010***

Text: Shriver, D. F. & Atkins, P. W. Inorganic Chemistry, 4rd ed., Freeman, New York, **2006**.

Instructor: Dr. Ghezai T. Musie
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Office hrs: TR 2:00 – 3:00 p.m
Class Times: Lecture TR 9:30 – 10:45 am

Course Objectives: The course is designed to increase awareness and understanding of inorganic chemistry as a discipline. The first objective of this course is to prepare chemistry students to become professional chemists or to enter into graduate program. The course will introduce new topics and will also deal with current research topics in *Inorganic Chemistry*. The topics include: group theory application in structures and spectra, reactivity, and mechanistic aspects of main group and transition metal complexes, organometallic reactions and catalysis.

Prerequisite: CHE 3464 and 3804.

Assignments
CHE 4263 is an upper division course and class attendance is essential to good performance in the course. Material may be covered which is not found in the textbook, and different approaches to material may be presented. Students are responsible for getting any lecture notes and assignments, which they may miss due to class absences, from their colleagues. Any material covered in class or in the reading may appear in examination questions.

Exercises and Problems
Working problems is *the* way to learn how to apply the principles of Inorganic Chemistry in dealing with the new topics. Although few are selected for you convenience, *work as many problems as possible*.

Course Grade
There will be three class period exams and a finial exam. The grading scale for each exam will be announced when the grade exams are returned. The scale will be based on the class average and difficulty of the exams.

Exams: The three equal point exams will count 60% towards the finial grade; unless notified otherwise, all exams will be in BSE building room 2.212 during the regularly scheduled lecture time, 9:30 – 10:45 a.m.

Exam 1: Thursday, Sept. 16
Exam 2: Tuesday, Oct. 19
Exam 3: Thursday, Nov. 18

Exams will cover lecture material and assigned reading and problems. Questions are designed to test both your knowledge and ability to use this knowledge to solve new problems.

Final Examination: A comprehensive **final exam** will be given on **Monday Dec. 13, 2010** from 10:30 – 1:00 p.m. in BSE 2.212. ***In order to access you performance on a national scale, the Final Exam will be an American Chemical Society Inorganic Exam.*** The final contributes 35% toward the semester grade. The remaining 5% is assigned for several pop quizzes that will be given during the semester.

Academic Support: I encourage you to utilize the academic support services available to you through the Tomás Rivera Center (TRC) to assist you with building study skills and tutoring in course content. These services are available at no additional cost to you. The TRC has several locations at the Main Campus and is also located at the Downtown Campus. For more information, visit the web site at www.utsa.edu/trcss or call (210) 458-4694 on the Main Campus and (210) 458-2838 on the Downtown Campus.

Notes on Tests and Exams
All tests and exams are to be taken as scheduled. There are no make-up tests or exams and unexcused absences will result in scores of zero. You must take the finial exam in order to achieve the passing grade. Questions about grading must be submitted within ***one week*** after the results are returned.

ADA Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statue that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Director of the Disability Services, in Room 2.03.18 Multidisciplinary Studies Building (MS) or call 458-4157. For additional information, please visit: http://www.utsa.edu/disability/students.htm

Roadrunner Honor Code: "A roadrunner doesn't lie, cheat, plagiaries, or steal or tolerate those who do" Upon accepting admission to UTSA, a student immediately assumes a commitment to uphold the Honor Code. For additional information please visit : http://www.utsa.edu/infoguide/appendices/b.html under the section 203

Additional Reference Books
1. Cotton, F. A.; Wilkinson, G. *Advanced Inorganic Chemistry*, 5th ed. Wiler-Interscience, 1988.
2. Cotton, F. A. *Chemical Application of Group Theory*, 3rd ed.
3. Douglas, B. E.; Hollingworth, A. *Symmetry in Bonding and Spectra*
4. Crabtree, R. H. *The Organometallic Chemistry of Transition Metals*
5. Lukehart, C. M. *Fundamental Transition Metal Organometallic Chemistry*

Lecture Schedule

Date	*Chapter*	*Topic*	*Exercise and Probs.*
Aug. 26 – Aug. 31	1	Atomic Structure (Review)	
Sept. 1 – Sept. 8	2	MO Theory	Ex. 2, 3, 4, 5, 6, 10, 12, 14, 16, 18
Sept. 9 – Sept. 14	7	Molecular Symmetry	Ex. 1, 2, 3, 4, 5, 9, 11 Prob. 1, 8
Sept. 16	***Exam I***		
Sept. 21 – Sept. 28	5	Oxidation and Reduction	Ex. 6, 9, 10, 12, 13 Prob. 8, 10, 11
Sept. 30 – Oct. 5	8	Review *d*-Metal Complexes	Ex. 4, 7, 8, 9 16, 20, 23, 25
Oct. 7 – Oct. 14	19	Electronic Spectra of Complexes	Ex. 5, 7, 8, 11, 14, 15, 19
Oct. 19	***Exam II***		
Oct. 21 – Oct. 28	20	Reaction Mechanisms of *d*-Metal Complexes	*As many as possible*
Nov. 2 – Nov. 16	*lecture note*	Main Group Organometallic Compounds	*As many as possible*
Nov. 18	***Exam III***		

Nov. 25 – Nov. 29	21	*d*-Block Organometallic Compounds	*As many as possible*
Nov. 29 – Dec. 2	25	Catalysis	*As many as possible*