CHEM 5315: Inorganic Chemistry
Fall 2014

Instructor: Dr. Rasika Dias

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Office Hours: Immediately after the class or by appointment

Section Information: CHEM 5315-001

Time and Place of Class Meetings: Tu, Th; 9:30-10:50 AM; Science Hall 105

Description of Course Content: This graduate level course deals with the synthesis, structure, bonding and properties of inorganic compounds including symmetry, coordination chemistry, organometallic chemistry, various characterization techniques, and inorganic reaction mechanisms. You should have some basic knowledge of molecular shapes, Lewis structures, and spectroscopy (NMR, IR)

Student Learning Outcomes: Upon completion of this course students will be able to describe Lewis structures of molecules, predict structures, shapes, symmetry and point groups of inorganic compounds, describe the nature of bonding between various element combinations, propose ways of characterizing and describe synthetic routes to inorganic-organometallic compounds, explain mechanistic steps of catalytic cycles, and to gain literature search and presentation skills

Required Textbooks and Other Course Materials:

Inorganic Chemistry, 4th Edition, Catherine Housecroft and Alan Sharpe
Solution manual available

Homework: Problems from the textbook will be suggested for practice but will not be collected and graded. Most correct answers are in the Solution Manual.

Other useful books:

- *Inorganic Chemistry*; Miessler and Tarr
- *Organometallics*; Elschenbroich and Salzer
- *Principles and Applications of Organotransition Metal Chemistry*; Collman, Hegedus, Norton, Finke. The First Edition of the same book by Collman & Hegedus is also useful
- *Inorganic Chemistry: principles of structure and reactivity;* James E. Huheey, Ellen A. Keiter, Richard L. Keiter
- *Inorganic Chemistry*; Duward F. Shriver, Peter Atkins, Cooper H. Langford
- *Chemistry of Elements*; Greenwood and Earnshaw
- *Advanced Inorganic Chemistry*; Cotton and Wilkinson
- *Inorganic Chemistry*; Holleman-Wiberg

Descriptions of major assignments and examinations:

The overall grade is based on

(i)	Two one hour exams	**September 30, October 28**	40 %
(ii)	Presentations	**Week of Nov 10**	10 %
(ii)	Review	On or before **November 26**	10 %
(iii)	Final exam	**December 11 (8:00-10:30 AM)**	40 %.

NO MAKE UP TESTS WILL BE GIVEN

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course

Letter grade assignment:

Based on the recent experience with this course, following numerical values approximate the letter which will be assigned

Numerical average score	**Letter grade**
85 and above	A
72-84	B
60-71	C
50-59	D
below 50	F

Presentations

12 minute power point presentation on the **chemistry of an element** (you will get your topic soon) and 3 minute question-answer session. I need a CD/USB Flash Drive containing the PowerPoint file of your talk on or before **November 10, 2014**. Presentations will be held during the week of **November 10 or on an agreed date** around that time period. More details will be provided in the class.

Comprehensive Literature Review

You should provide a clear overview, including major developments of the topic assigned to you.

Layout of the review

See the Journals: Chemical Reviews or Coordination Chemistry Reviews

Title: Exact area/topic will be assigned
Introduction: types of compounds/chemistry/information included in the review
Main body of the review: provide key information and current understanding of the topic with appropriate details.
References: ACS style (see Chem. Rev.)

Sources of information: **SciFinder Scholar, Cambridge Structural Database**, Journals, Reviews, Books, etc.

There is a page limit (maximum) of 20 pages (double spaced, Arial, font size 11) for the review article. Must be turned in by **November 26, 2014.**

Attendance and other requirements: Much of the content of this class occurs in class. Therefore, you benefit by attending regularly. Punctuality is important and expected.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period after consulting the graduate advisor. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance**.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/ses/fao).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge

to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.