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***Advanced Inorganic  
Chemistry***  
**CHM 4612**  
**Spring 2016**

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Lecture  
TR 4:30 - 5:45 pm  
Building 50, Room 1400  
Office Hours  
TR 1:30-4:00 pm

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**Course Information and Requirements**

**Student Learning Outcomes:**

- Demonstrate a good understanding and retention of basic chemical principles and factual knowledge in the core areas of chemistry.
- Demonstrate the ability to apply basic mathematics (e.g. arithmetic, algebra, and geometry) and basic chemical principles to find solutions to quantitative problems and situations.
- Apply logical thought processes and background knowledge to draw appropriate conclusions from chemically related information and data (e.g. plots, diagrams, tables)

**Required Materials:**

In pursuit of the objectives outlined above, the course will utilize the following:

Textbook: "Inorganic Chemistry", Catherine E. Housecroft and Alan G. Sharpe (4<sup>th</sup> Edition, ISBN 978-0-273-74275-3)

Prerequisites: CHM 3610 Inorganic Chemistry and CHM 4410C Physical Chemistry I, or permission of instructor.

**Websites for Additional Information:**

<http://www.unf.edu/~michael.lufaso/chem4612/> (lecture notes and supplemental info.)

<http://blackboard.unf.edu/> (course scores)

**Class Format:**

Lecture classes will begin promptly and it is assumed all students will be in class on time and remain until dismissed. Avoid disruptive behavior such as using cell phones, PDA, headphones, laptops or other electronic devices. The lecture class and textbook are intended to complement each other. Students are responsible for everything that is covered during the lecture class period. Each student is advised to take thorough class notes. Note that merely copying what is on the PowerPoint slides or board is not sufficient for class notes – you should also take organized notes on verbal explanations.

**Student Responsibility:**

Each student receives this information about Advanced Inorganic Chemistry in the first lecture. It is your responsibility to read this material and be familiar with course content, course procedures, and grading. You are also responsible for any announcements concerning course procedures which are made in class, whether you are present or not. If you are absent, you are expected to get notes, announcements, handouts, etc. from another student in the class.

**Academic Integrity Code:**

Ethical behavior is expected in all work. Any material submitted in Inorganic Chemistry must represent your own work and follow the Academic Integrity Code. Students supplying materials for others to "look at" (*e.g.* exams) may be charged with academic misconduct. The use of 'cheat sheets', stored text, constants, or formulas in calculators may be regarded as a violation of academic standards. A zero tolerance policy will be in effect. If you haven't already done so, you should familiarize yourself with UNF's academic policies and regulations, especially those dealing with academic integrity. The UNF undergraduate catalog <http://www.unf.edu/catalog/> and the student handbook <http://www.unf.edu/student-affairs/student-handbook.html> contain more details regarding the Academic Integrity Code and possible faculty actions in a case of suspected academic misconduct.

**Accommodations:**

Students with disabilities who seek reasonable accommodations regarding their coursework must first be registered with the UNF Disability Resource Center (DRC). The DRC will work with the student to obtain required documentation of disability and to partner with the student to determine accommodations as required under the Americans with Disabilities Act (ADA). When all required documentation is received, the student will deliver a letter from the DRC that advises faculty about approved accommodations. If students registered with the DRC do not receive approved accommodations, they should immediately contact the DRC.

**Homework:**

Homework will be assigned and is one of the most important study aids. I will assign specific homework problems, which should be completed. Chemistry, in particular, is a cumulative subject in which new material builds upon previous concepts. Practice is the key! Don't fall behind! It is helpful to learn from one another, through the formation of study groups, as a useful mechanism to learn difficult subject material. Make sure you independently understand the chemical and physical concepts. Your notes and homework will be helpful in studying for the midterm and final exams.

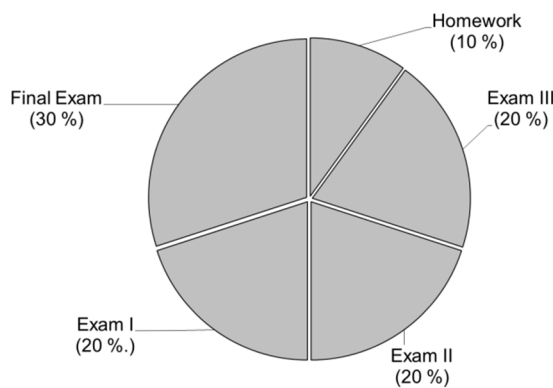
**Exams:**

There will be three midterm exams and a final exam. Excused absences are only for reasons beyond your control and must be documented by official documentation (police report, emergency room receipt, etc.). Term exams (3) are scheduled on Thursday February 4, Tuesday March 8, and Tuesday April 12. The final exam is scheduled on Thursday, April 28 (3:00-4:50 pm).

### Grading and Evaluation:

Your performance and final grade in the course will be evaluated on the basis of total points earned. The distribution of points will be based on the following:

Homework	10 %
Exam I	20 %
Exam II	20 %
Exam III	20 %
Final Exam	30 %
Total	100 %



The course will be graded so that A: 92 - 100%; A-: 90 - 92%; B+: 88 - 90%; B: 82 - 88; B-: 80-82; C+: 78 - 80%; C: 68 - 78%; D: 55 - 68%. +/- final grades will be assigned. Retain all graded papers so that you can present them if you become aware of a grade recording error. Ethical behavior is expected in all work inside and out of class.

### Helpful Suggestions or: How to Succeed

Chemistry, in the broadest sense, is the study of the properties and interactions of matter. Chemical principles can be taught as a series of linked concepts. Procrastination, following by “all-nighters” or “cramming” often lead to lack of success. Deliberate and consistent effort will likely yield the best results. Plan to spend at least 4 hours outside of class for every lecture. Some students will need more, some students will need less. Keep up in both chapter reading and homework problems. Don't fall behind! You will understand the material in class better if you have read the relevant sections and chapter prior to the lecture. Work on homework problems individually initially, then in groups. Learn from each other, but remember that you will not be taking exams as a group. Make sure you understand the material and can do the problems independently; otherwise it is likely that you will do poorly on the exam. Utilize my office hours to better understand material you find particularly difficult. Take high-quality notes, and review them periodically and in the context of the text book. Practice doing homework problems, and even consider going to the library to obtain other chemistry books for additional practice problems. More practice and study of the problems, concepts, and material will help you on exams - since you will be able to answer questions more rapidly and have time to recheck your answers and calculations. I will gladly provide additional problems for practice. I desire to have each of you learn chemistry according to your ability, and also enjoy the course. *Practice is the key. Don't fall behind. Your success in this course will largely depend on your effort and motivation!*

**Tentative Schedule:** Tentative lecture topic coverage, subject to change.

<i><u>Week of</u></i>	<i><u>Lecture Topic</u></i>	<i><u>Reading</u></i>
1 Jan 7	Nonaqueous media	Ch. 9
2 Jan 12,14	Hydrogen, Group 1	Ch. 10, Ch. 11
3 Jan 19,21	Group 2, Group 13	Ch. 12, Ch. 13
4 Jan 26,28	Group 13, Group 14	Ch. 13, Ch.14
5 Feb 2,4	Group 14	Ch. 14
6 Feb 9,11	Group 15, Group 16	Ch. 15, Ch.16
7 Feb 16,18	Group 16, Group 17,	Ch. 16, Ch. 17
8 Feb 23,25	Group 17, Group 18	Ch. 17, Ch. 18
9 Mar 1,3	d-block 1 <sup>st</sup> row metals; d-block 2 <sup>nd</sup> , 3 <sup>rd</sup> row metals	Ch. 21, Ch. 22
10 Mar 8,10	Organometallic s, p;	Ch. 23
11 Mar 22,24*	Organometallic s, p; organometallic d	Ch. 23, Ch. 24
12 Mar 29,31	organometallic d, catalysis	Ch. 24, Ch. 25
13 Apr 5,7	Inorganic Reactions	Ch. 26
14 Apr 12,14	f block	Ch. 27
15 Apr 19	Inorganic materials and nanotechnology	Ch. 28
E Apr 28	<u>Final Exam</u> : Thursday, April 28, 2016 (3:00-4:50 pm).	

Mon. Jan. 18 is a University holiday and Spring Break is March 14-18.

\*Deadline to withdraw is Friday, March 25.