

CHEM 4330.001 – Advanced Inorganic Chemistry
MWF: 11:00 – 11:50 am, RBS 2015
Fall 2009 Syllabus

Instructor

Dr. Jason Smee (jsmee@uttyler.edu)
RBS 3030, 903.566.7069

Office Hours

MWF 9:30-10:30 am, TR 1:00-2:00 pm
or by appointment

Course Description: This course will focus primarily on symmetry and group theory, molecular orbital theory, organometallic chemistry, and bioinorganic chemistry (a more complete list is provided on the next page). Computer-based molecular modeling (both in-class and as homework) will also be utilized.

Required Items: *Inorganic Chemistry*, 3/E, by Gary L. Miessler & Donald A. Tarr (ISBN-13: 9780130354716) and a scientific calculator are required.

Recommended Items: An organic chemistry model kit and/or other inorganic textbooks are highly recommended.

Blackboard: Course information, grades, lecture materials, and handouts will be available on the course Blackboard website. (ccs.uttyler.edu/blackboard/)

Student Evaluation and Grading

Student Learning Outcomes: By the end of this course, students should be able to 1) apply group theory concepts to a variety of chemical topics, 2) prepare and analyze molecular orbital diagrams for simple compounds, 3) demonstrate a mastery of the basic concepts of electronic spectroscopy, 4) recognize common types of ligands and reactions in organometallic chemistry, and 5) describe specific examples/applications of bioinorganic chemistry.

Attendance: Attendance will not be taken, but class participation will be sought throughout the semester in various forms to nurture student communication and presentation skills. Participation will not be graded *per se*, but will be taken into account in the final grade.

Homework: Homework sets will be assigned throughout the semester. Homework must be turned in **by 5 pm**, on the assigned day. A penalty of 5 percentage points will be deducted for each day the homework is late (weekends count as one day). If you know you will be absent, you may turn it in early.

Exams: Three exams will be given during class time and are worth 100 pts each. The final exam (100 pts) is comprehensive (the ACS Inorganic Chemistry standardized exam) and is mandatory to pass the class. Missed exams due to an unexcused absence will result in a grade of zero. In the event of an excusable situation, an alternative time can be arranged to take the exam, but you need to give me at least two days notice (if possible).

Grading Criteria

3 regular exams × 100 pts each	300 pts
1 cumulative final exam × 100 pts	100 pts
<u>Homework*</u>	<u>100 pts</u>
Total**	500 pts

*The final homework grade will be the overall percentage score for all of your homework assignments.

**Grades will tentatively be based on a 90/80/70 scale, but they may be adjusted based upon my evaluation of the class's overall performance.

Important Dates

(exam/homework dates are tentative)

September 7: Labor Day – no classes

September 9: Census date – filing deadline for grade replacement

September 30: Exam I/Homework I due

October 15 (Thursday): Priority deadline for May 2010 graduation

October 28: Exam II/Homework II due

October 30 (Friday): Last day to drop or withdraw from courses

November 25-27: Thanksgiving holiday – no classes

December 2: Exam III/Homework III due

December 18 (Friday): FINAL EXAM 10:15 am – 12:15 pm

Tentative Order of Topics

Acid-Base Chemistry (most of Chapter 6)

Symmetry/Group Theory (Chapter 4)

Molecular Orbital Theory (Chapter 5)

Organometallics (Chapters 13–14)

Isolobal analogy, metal–metal bonds and cluster compounds (Chapter 15.2–15.4)

Bioinorganic/bioorganometallic chemistry (Chapter 16.1–16.7)

Lanthanide and actinide chemistry (handouts)

University Policies

Students Rights and Responsibilities

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link:

<http://www.uttyler.edu/wellness/StudentRightsandResponsibilities.html>

Grade Replacement/Forgiveness

If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates will receive grade forgiveness (grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.

State-Mandated Course Drop Policy

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the 12th day of class (See Schedule of Classes for the specific date). Exceptions to the 6-drop rule include, but are not limited to, the following: totally withdrawing from the university; being administratively dropped from a course; dropping a course for a personal emergency; dropping a course for documented change of work schedule; or dropping a course for active duty service with the U.S. armed forces or Texas National Guard. Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.

Disability Services

In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Support Services counselor. If you have a disability, including a learning disability, for which you request an accommodation, please contact Ida MacDonald in the Disability Support Services office in UC 282, or call (903) 566-7079.

Student Absence due to Religious Observance

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

Student Absence for University-Sponsored Events and Activities

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement:

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.