



Course	CHEM 3341, Inorganic Chemistry
Professor	Dr. John W. Sibert
Term	Fall 2009
Meetings	MWF 9:30–10:20, FN 2.104

Professor's Contact Information

Office Phone	972-883-2918
Office Location	Berkner Hall (BE), room 3.518
Office Hours	T, W 2:00 – 3:00 PM or when my door is open
Email Address	sibertj@utdallas.edu
Other Information	Best way to contact me: email listed above or stop by my office

General Course Information

Course Description	Survey of inorganic chemistry with emphasis on the modern concepts and theories of inorganic chemistry including electronic and geometric structure of inorganic compounds. Topics address contemporary physical and descriptive inorganic chemistry
Learning Outcomes	<p><u>Objectives</u> The goal of this course is to provide students with a thorough foundation in atomic structure, periodicity, bonding and symmetry with subsequent extension of these basic principles to acid/base, solid state and coordination chemistry. Students will develop an understanding of the elements and the ability to predict the structures, certain properties and reactivities of a range of representative ionic and covalent compounds.</p> <p><u>Expected Learning Outcomes</u> Upon successful completion of this course, students will therefore:</p> <ol style="list-style-type: none">1. Be able to explain atomic structure and bonding using currently accepted theories.2. Be able to use group theory to describe molecular orbital diagrams and molecular properties.3. Be able to integrate knowledge of atomic structure with the structure and properties of ionic and molecular compounds.4. Be able to explain the history, bonding and properties of representative main group elements, coordination and organometallic compounds
Required Text	<i>Inorganic Chemistry, 3rd Edition</i> by Gary L. Miessler and Donald A. Tarr

Schedule

Class Period	Day	Date	Topic	Chapter
1	Fri	Aug 21	Introduction	1
2	Mon	Aug 24	Atomic Structure	2
3	Wed	Aug 26	Atomic Structure	2
4	Fri	Aug 28	Atomic Structure	2
5	Mon	Aug 31	Atomic Structure	2
6	Wed	Sept 2	Simple Bonding Theory	3
7	Fri	Sept 4	Simple Bonding Theory	3
	Mon	Sept 7	Labor Day	
8	Wed	Sept 9	Simple Bonding Theory	3
9	Fri	Sept 11	Exam #1	
10	Mon	Sept 14	Symmetry and Group Theory	4
11	Wed	Sept 16	Symmetry and Group Theory	4
12	Fri	Sept 18	Symmetry and Group Theory	4
13	Mon	Sept 21	Symmetry and Group Theory	4
14	Wed	Sept 23	Symmetry and Group Theory	4
15	Fri	Sept 25	Symmetry and Group Theory	4
16	Mon	Sept 28	Molecular Orbitals	5
17	Wed	Sept 30	Molecular Orbitals	5
18	Fri	Oct 2	Molecular Orbitals	5
19	Mon	Oct 5	Molecular Orbitals	5
20	Wed	Oct 7	Molecular Orbitals	5
21	Fri	Oct 9	Exam #2	
22	Mon	Oct 12	The Crystalline Solid State	7
23	Wed	Oct 14	The Crystalline Solid State	7
24	Fri	Oct 16	The Crystalline Solid State	7
25	Mon	Oct 19	The Crystalline Solid State	7
26	Wed	Oct 21	Chemistry of the Main Group Elements	8
27	Fri	Oct 23	Chemistry of the Main Group Elements	8
28	Mon	Oct 26	Chemistry of the Main Group Elements	8
29	Wed	Oct 28	Chemistry of the Main Group Elements	8
30	Fri	Oct 30	Chemistry of the Main Group Elements	8
31	Mon	Nov 2	Exam #3	
32	Wed	Nov 4	Coordination Chemistry I: Structures and Isomers	9
33	Fri	Nov 6	Coordination Chemistry I: Structures and Isomers	9
34	Mon	Nov 9	Coordination Chemistry I: Structures and Isomers	9
35	Wed	Nov 11	Coordination Chemistry II: Bonding	10
36	Fri	Nov 13	Coordination Chemistry II: Bonding	10
37	Mon	Nov 16	Coordination Chemistry II: Bonding/Electronic Spectra	10,11-1
38	Wed	Nov 18	Coordination Chemistry IV: Reactions and Mechanisms	12
39	Fri	Nov 20	Coordination Chemistry IV: Reactions and Mechanisms	12
40	Mon	Nov 23	Coordination Chemistry IV: Reactions and Mechanisms	12
41	Wed	Nov 25	Organometallic Chemistry	13
	Fri	Nov 27	Thanksgiving Holiday	
43	Mon	Nov 30	Organometallic Chemistry	13
44	Wed	Dec 2	Organometallic Chemistry, Reactions and Catalysis	13/14
45	Fri	Dec 4	Organometallic Reactions and Catalysis	14
46	Mon	Dec 7	Exam #4	
47	Wed	Dec 16	Cumulative Final Exam (8:00 – 10:45 AM)	

Course Policies

Grading (credit) Criteria	<p><u>Course Evaluation:</u></p> <table style="margin-left: 40px;"> <tr> <td>(i) Quizzes/Homework</td> <td style="text-align: right;">15%</td> </tr> <tr> <td>(ii) Midterm Exams (4 x 15%)</td> <td style="text-align: right;">60%</td> </tr> <tr> <td>(iii) Final Exam</td> <td style="text-align: right;">25%</td> </tr> </table> <p>(i) <i>Quizzes:</i> Quizzes will be announced one lecture in advance and may be in the form of individual exercises, group activities or take-home problems. There will be no makeup quizzes given (you will receive a “zero” for any quiz you miss). Your one lowest quiz grade will be dropped.</p> <p><i>Homework:</i> Homework will be assigned from each chapter and be supplemented by assignments written by Dr. Sibert. It may be collected for a grade. If so, you will be told when the assignment is given.</p> <p>(ii) <i>Midterm exams:</i> ALL 4 MIDTERM EXAMS MUST BE TAKEN, at the scheduled time and on the scheduled day. If you have an acceptable, documented reason for missing an exam (e.g., documented illness, participation in UTD-sponsored event, etc.), you will be allowed to replace the missed exam with your score on the final. Otherwise, you will receive a "zero" for that exam. You may arrive late for an exam up until the first student finishes and leaves (only penalty being that you will have proportionally less time to finish the exam). After this grace period you will not be allowed to take the exam and will receive a score of “zero”.</p> <p>(iii) <i>Final Exam:</i> The final exam must be taken, will be comprehensive and cannot be replaced by any other grade, so don't miss it. No makeup final will be given. NOTE THE DAY OF THE FINAL (WEDNESDAY, DEC. 16).</p>	(i) Quizzes/Homework	15%	(ii) Midterm Exams (4 x 15%)	60%	(iii) Final Exam	25%
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(ii) Midterm Exams (4 x 15%)	60%						
(iii) Final Exam	25%						
Extra Credit	There is no extra credit .						
Class Attendance	Your attendance and class participation will have an impact on your final grade. Taking an active role in your learning will (guaranteed) help you perform better.						
Student Conduct and Discipline	<p>The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, <i>A to Z Guide</i>, which is provided to all registered students each academic year.</p> <p>The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the <i>Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3</i>, and in Title V, Rules on Student Services and Activities of the university's <i>Handbook of Operating Procedures</i>. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).</p> <p>A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.</p>						
Academic Integrity	<p>The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.</p> <p>Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission</p>						

	<p>as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.</p> <p>Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.</p>
Email Use	<p>The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's UTD email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at UTD provides a method for students to have their UTD mail forwarded to other accounts.</p>
Withdrawal from Class	<p>The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.</p> <p><i>Undergraduates last day to withdraw with WP/WF: Thursday, Oct 22</i></p>
Student Grievance Procedures	<p>Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.</p> <p>Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.</p>
Incomplete Grades	<p>As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.</p>
Disability Services	<p>The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m.</p>

	<p>to 5:30 p.m.</p> <p>The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688 (972) 883-2098 (voice or TTY)</p> <p>Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.</p> <p>It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.</p>
<p>Religious Holy Days</p>	<p>The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.</p> <p>The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.</p> <p>If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.</p>

These descriptions and timelines are subject to change at the discretion of the Professor.