

Creighton University
Inorganic Chemistry I, Chm 451
with Dr. Bruce Mattson
Fall Semester, 2011
Syllabus & Course Information

CATALOG DESCRIPTION:

Relation of atomic and molecular structure to chemical and physical properties. Periodicity and descriptive chemistry of inorganic classes and groups. Topics covered include group theory, molecular orbital theory, molecular and ionic structures, redox reactions, acid/base theories, and coordination compounds. Prereq: CHM 341.

- 1. Introduction.** This course is designed for chemistry majors who have already taken Physical Chemistry, Chm 341. It is assumed that students recall principles of general chemistry. This syllabus contains course information that will be of use throughout the semester. All of the course policies are described herein. Please review its contents before the next class meeting. If you have further questions regarding the course organization and policies, please ask me. As your chemistry professor, I wish you success in the course. I am here to help you with your questions, problems or progress in the course.
- 2. Textbook and Accessories.** All of these materials are required for the course:
 1. Text: ***Inorganic Chemistry***, by Miessler and Tarr, 4th Edition.
 2. Text II: A general chemistry text, preferably McMurry & Fay (I can loan you one)
 3. Simple scientific calculator
 4. Large loose-leaf binder for notes, handouts, homework, etc.
- 3. Office, Phone, e-Mail.** My office is Hixson 262; my phone: (402) 280-2278; my e-Mail: brucemattson@bluejay.creighton.edu
- 4. Attendance with Participation Policy.** *I require attendance with participation.* I feel that I have information that will be useful and interesting. I know that attending my lectures will help you on the exams. Attendance with participation is worth 100 points. Each lecture, up until Dead Week, is worth up to 5 points. You can miss two lectures and still receive 100 points (there are 22 lectures, not counting Day 1, prior to Dead Week.) I will not take attendance during Dead Week. Arriving late: If class has started, you will lose one point for being 0 -10 minutes late, -2 points for 10 – 20 minutes late, -3 points for 20 – 30 minutes late, -4 points for 30 – 40 minutes late and -5 points for more than 40 minutes late. Attendance without participation is the same as being absent. If you are working on another subject, sleeping or in any other way not engaged in the lecture/discussion, you are effectively not in attendance. Participation will often include in-class work assignments that will be collected and graded.
- 5. Homework.** I will distribute worksheets (homework) over each lecture topic. These problems should be done with your inorganic study partner. Each homework assignment is worth 5 pts. I may “evaluate” your homework progress on Thursdays (open homework quiz) and will collect your work on most Tuesdays. You and your partner can hand in one copy. Working problems is the single most important way to

prepare for tests. Use my office hours to ask questions about these problems. Homework totals 100 pts for the semester.

Important note regarding homework: In order to receive full credit for homework problems, you must:

- (a) show all of your work in a clear and easy to understand fashion
- (b) have the correct answer
- (c) use legible penmanship that is not unusually small (I have old eyes), and
- (d) box your answers.

6. Office Hours. Office hours are those hours during which I am in or near my office and available for answering questions, discussing studying, chemistry. Usually time is available throughout the day as well so that you may come to my office or call for an appointment. If you would like to come in groups, please do so. My office hours are:

Mondays: 10:30 – 12:00 and usually available from 1 – 3 pm

Tuesdays: 1:00 – 4:00

Wednesdays: 10:30 – 12:00 and usually available from 1 – 3 pm

Thursdays: 12:00 – 1:00 and usually available from 2 – 4 pm

I am frequently in my office between 8 AM and 4 PM. If the door is open, you may ask questions!

7. Course Content. A day-by-day syllabus (calendar) is included with this information. Please note the dates for exams.

8. Learning Objectives. You will be given learning objectives to guide your study at the beginning of each chapter.

9. Course website. This course is supported by a website. The site includes all of the course information, copies of handouts, answers to some problems, old exams, etc. Link to it from mattson.creighton.edu

10. Exams/Quizzes. Three exams will be given throughout the semester. The exams are based on the lecture material, assigned material from the text and the homework problems. You will be allowed to use a non-programmable calculator on the exams. You will also be allowed to bring a periodic table (provided) with whatever notes you deem appropriate on it to the exam. Exams are worth 100 points each. Exams will be returned as soon as possible after the exam date, often within 2 – 3 days. I will give 10-minute quizzes from time-to-time. These will be announced and will usually be worth 5 – 10 pts. Quizzes are worked individually and the points contribute towards the 100 pts on the next exam. (If we had 15 pts worth of quizzes, the exam will be 85 pts for a total of 100 pts.)

11. Re-grading policy. Grading appeals for an exam must be made to me within three school days of the date on which the exams are returned.

12. Nomenclature Skills. You are required to know the names of the most important elements and chemical ions.

13. Final Exam. The final exam is a multiple-choice exam produced by the American Chemical Society. You will be allowed to use a non-programmable calculator. Your percentage score on this exam will be determined by converting your raw score to its corresponding national percentile and then averaging this number with 100%. Thus, a score that ranks you at the 60th national percentile will give you 80% for your grade on the final exam.

14. E-Mail Grade Distribution. Your grades will be distributed to you within three school days after each exam and after the final exam. I use e-mail to distribute course materials and your grades. If you do not want your grades to be e-mailed to you, please let me know in writing.

15. Grading. This course is worth 600 points in total, distributed as follows:

Exams 1 – 3 (and associated quizzes):	300 points
Homework:	100 points
Attendance and participation:	100 points
Final Exam	100 points
Total	600 points

The grade you will be assigned can be determined with the following chart. Note: These are the absolute cut-offs; there is no “rounding.”

Grade Cut-offs:		
A+*	≥	95.00%
A	≥	90.00%
B+	≥	85.00%
B	≥	80.00%
C+	≥	75.00%
C	≥	70.00%
D	≥	60.00%

**The University does not acknowledge the “A+” as a grade. It will be recorded as an “A”*

16. Academic Dishonesty. The University has an established policy on academic dishonesty. The University defines the term to include “representing the work of others to be one's own (cheating on an exam), tampering with the experiments of others, defacing or tampering with library or student materials or facilitating dishonesty on an exam.” The latter point is understood to include situations where you notice cheating occurring but do not report it immediately. In General Chemistry, the most blatant forms of academic dishonesty include: (a) copying the work of others on exams, (b) sharing information with others about exams (both during the exam or between class periods, (c) using notes when notes are not allowed (in calculator slip covers, palms of hands, baseball caps, slips of paper tucked away, and so on), (d) making changes on graded materials that have been returned to you, (e) working together on take-home exam problems when that is expressly forbidden, (f) cell phone photographing or texting exam information or answers, and so on.

As a member of the Creighton community, promise yourself and Creighton to join others in:

- ❖ *committing ourselves to the pursuit of knowledge throughout our lives and to developing the skills that we have been given.*
- ❖ *acknowledging our obligation to respect all women and men and to use wisely the resources of the world around us.*
- ❖ *solemnly promising to uphold the highest moral and ethical standards and thus to bring credit to the College by our life and our work.*

Any act of academic dishonesty tarnishes and diminishes the worth of each of these promises. Remember your promises. Keep your promises. Live up to your

promises. Extend these promises into lifelong promises to yourself and others. You will not be disappointed.

In the event that you are accused of engaging in academic dishonesty, you will receive a "0" for the homework, exam or quiz score. The incident will be reported in writing in accordance with the protocol set forth by the College of Arts and Sciences. (For details, see the website <http://puffin.creighton.edu/ccas/policies/acadhonesty.html>.) Students accused of academic dishonesty have the right to an appeal.

CHEMISTRY DEPARTMENT MISSION STATEMENT

The Department of Chemistry is committed to excellence in its programs. It works to help both its students and faculty discover their talents and abilities to the fullest, instilling critical and creative thinking. The Department specifically is committed to challenging its students to think and act as scientists and responsible citizens, by offering a diverse set of lecture courses and teaching approaches, as well as a significant amount of experience in laboratory work. The Department is also committed to offering its faculty the opportunity to grow as scholars and teachers. By their example and by presenting opportunities for such activity, the faculty members of the Department encourage students to participate in scholarly endeavors, especially independent research. We emphasize the values of trust, respect for others, and personal and professional integrity by acting in this way and by expecting our students to do the same.

Daily Plan - Chm 451 Dr. Mattson August, 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				25 1. Intro- duction; review gen chem. concepts	26	27
28	29	30 2. effective nuclear charge, shielding, periodic properties	31			

September, 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 3. Simple Bonding, Lewis dots and VSEPR	2	3
4	5	6 3. Simple Bonding	7	8 4. Symmetry	9	10
11	12	13 5. Molecular Orbitals	14	15 5. Molecular Orbitals	16	17
18	19	20 Exam 1	21	22 5. Molecular Orbitals	23	24
25	26	27 5. Molecular Orbitals	28	29 6. Acids, Bases, etc.	30	

October, 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 7. Solids	5	6 7. Solids	7	8
9	10	11 7. Solids	12	13 7. Solids	14	15
16 M	17 I B	18 D R	19 T E	20 E A	21 R K	22 M
23	24	25 Review	26	27 Exam 2 HW#7 due	28	29
30	31					

November, 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 9. Coord Chem. I	2	3 10. Coord. Chem. II	4	5
6	7	8 10. Coord. Chem. II	9	10 10. Coord. Chem. II	11	12
13	14	15 11. Coord. Chem. III	16	17 11. Coord. Chem. III	18	19
20	21	22 no class	23	24 Thanks- giving	25	26
27	28	29 Exam 3	30			

December, 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 12. Inorg. reactions	2	3
4	5	6 13. Organo- metallic I	7	8 14. Organo- metallic II	9	10
11	12 Final 1 – 3					