

CHM443 INORGANIC CHEMISTRY
Fall 2010

Dr. Keith E. Peterman	Office Hours in room C215
http://faculty.ycp.edu/~peterman/	M-W 1:30-3:00; Tu-Th 2:00-3:00
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Text

Rayner-Canham and Overton; *Descriptive Inorganic Chemistry 5th ed.*, Freeman, 2010.

Course Description

A study of the descriptive and theoretical aspects of modern inorganic chemistry. Topics include atomic structure, bonding theories, acid-base and redox concepts, chemistry of the main group elements, coordination chemistry and the transition elements, and selected topics of current interest.

Grading Policy

There will be three in-class exams worth 100 points each.

Homework Problems

You should complete *all odd numbered Exercises* at the end of each chapter. Eighty percent of each exam will include questions taken directly from the homework.

Literature Articles

Each of you will select three different topics and review a current *Inorganic Chemistry* literature article related to the topic. A hand-written summary of an article is due before each of the three exams. An evaluation of 0-10 points will be granted for each one page article review.

Attendance Policy

This is a senior level course that integrates many concepts from previous courses. Therefore, it is essential for you to attend class regularly in order to perform at the highest level. Class attendance however will not be used as a criterion for evaluation.

Academic Standards

York College's mission statement stipulates that strict adherence to principles of academic honesty is expected of all students. Therefore, academic dishonesty will not be tolerated at York College. Academic dishonesty refers to actions such as, but not limited to, cheating, plagiarism, fabricating research, falsifying academic documents, etc., and includes all situations where students make use of the work of others and claim such work as their own. When a faculty member believes a student has committed an act of academic dishonesty, the faculty member must inform the student in writing and then has ten business days from that written notification to the student to report the incident to the Dean of Academic Affairs and the Department Chair. Documentation related to instances of academic dishonesty will be kept on file in the student's permanent record. If the academic dishonesty is the student's first offense, the faculty member

will have the discretion to decide on a suitable sanction up to a grade of 0 for the course. Students are not permitted to withdraw from a course in which they have been accused of academic dishonesty.

Writing Standards

As recommended by the Faculty Senate and stated in the College Faculty Manual: “York College recognizes the importance of effective communication in all disciplines and careers. Therefore students are expected to competently analyze, synthesize, organize, and articulate course material in papers, examinations and presentations. In addition, students should know and use communication skills current to their field of study, recognize the need for revision as part of their writing process, and employ standard conventions of English usage in both writing and speaking. Students may be asked to further revise assignments that do not demonstrate effective use of these communication skills.”

Your Grade

Here is an explanation of the grade levels as approved by the York College Academic Senate and Administration:

Grade	%	total pts
4.0	94 – 100	310-330
3.5	88 – 93	290-309
3.0	82 – 87	271-289
2.5	76 – 81	251-270
2.0	70 – 75	231-250
1.0	58 – 69	191-230
0.0	0 – 57	≤190
W	See below	
I	See below	

4 (Excellent): This grade denotes accomplishment that is truly distinctive and decidedly outstanding. It represents a high degree of attainment and is a grade that demands evidence of originality, independent work, an open and discriminating mind, and completeness and accuracy of knowledge, as well as an effective use of the knowledge.

3.5 (Very Good): This grade denotes mastery of the subject matter. It represents very good achievement in many aspects of the work, such as initiative, serious and determined industry, the ability to organize work, and the ability to comprehend and retain subject matter and to apply it to new problems and contexts.

3 (Good): This grade denotes considerable understanding of the subject matter.

It represents a strong grasp and clear understanding of the subject matter and the ability to comprehend and retain course content.

2.5 (Above Average): This grade denotes above average understanding of the subject matter. It represents a good grasp of the subject matter and the ability to comprehend and retain course content.

2 (Average): This grade denotes average understanding of the subject matter. It represents the grade that may be expected of a student of normal ability who gives the work a reasonable amount of time and effort.

1 (Below Average): This grade denotes below average understanding of the subject matter. It represents work that falls below the acceptable standard.

0 (Failure): This grade denotes inadequate understanding of the subject matter. It signifies an absence of meaningful engagement with the subject matter and that the student is not capable of doing or understanding the work or has made little or no effort to do so.

W (Withdrawal): Students are permitted to withdraw from courses without penalty up to the ninth Friday of the fall or spring semester. Corresponding deadlines are set for all other semesters (e.g., summer sessions). Withdrawal after that time shall result in a grade of “0.”

I (Incomplete): The student may request permission from the instructor to receive an incomplete prior to the final examination and must present extraordinary reasons for the petition. The Instructor should indicate on the Attendance/Final Grade Record the required work the student must do to complete the course. Any grades of “I” not removed within two calendar months after the end of the semester will automatically be changed to “0” in the Records Office. Grades of incomplete should only be provided to students who have completed a substantial portion of all course requirements.

**CHM443: Inorganic Chemistry
Course Schedule**

Date	Topic	Reading
Sept 1	Electronic Structure of the Atom	Ch 1
8	The Periodic Table	Ch 2
13	Covalent Bonding	3.1-3.12
15	Molecular Symmetry	3.13-3.14
20	Metallic and Ionic Bonding	Chs 4 & 5
22	Inorganic Thermodynamics	Ch 6
27	Review	
29	Exam 1	
Oct 4	Solvent System Approach to Acids and Bases	7.1-7.5
6	Pearson Hard-Soft Acid Base Concept, Superacids	7.6-7.9
11	Redox Reactions	8.1-8.7
13	Latimer and Frost Diagrams	8.8-8.13
20	Periodic Trends	Ch 9
25	Descriptive Chemistry: Groups 1 and 2	Chs 11 and 12
27	Descriptive Chemistry: Groups 13 and 14	Chs 13 and 14
Nov 1	Review	
3	Exam 2	
8	Transition Metal Complexes	19.1-19.5
10	Bonding Theories of Transition Metal Compounds	19.6-19.13
15	Properties of Transition Metals	Ch 20
17	Descriptive Chemistry: Group 12	Ch 22
22	Descriptive Chemistry: Groups 15 and 16	Chs 15 and 16
24	Descriptive Chemistry: Groups 17 and 18	Chs 17 and 18
29	Review	
Dec 1	Climate Change and COP16	
6	Climate Change and COP16	
8	Organometallic Chemistry: Main Group Elements	23.1-23.5
13	Review	
20	Exam 3 (final exam week at 3:00pm)	