

# Inorganic Chemistry (Chem 4210/6210)

## Spring 2012

**Prerequisite:** Chem 4120/6120

**Professor:** Dr. K.B. Grant, 423 NSC, (404) 413-5522, kbgrant@gsu.edu

**Lecture:** TTh 2:30 PM - 3:45 PM, Aderhold Learning Center, Room 431

**Office Hours:** TBA

**Required Texts:** "Inorganic Chemistry: Principles of Structure and Reactivity, **Fourth Edition**" James E. Huheey, Ellen A. Keiter, Richard L. Keiter (1993); "Descriptive Inorganic Chemistry, **Fifth Edition**" Geoff Rayner-Canham and Tina Overton (2010).

**Optional Text:** "Student Solutions Manual for Descriptive Inorganic Chemistry, 5th Edition" Geoff Rayner-Canham and Tina Overton.

**Tentative Lecture Schedule:** This schedule is a general guide and will be modified as needed.

<u>Date</u>	<u>Chapter</u>	<u>Topic</u>	(Tu = Tuesday)
<b>Jan 10 (Tu)</b>	2 Huheey; 1 Rayner	Atomic Structure	
Jan 12	2 Huheey; 2 Rayner	Atomic Structure & Periodicity	
Jan 17 (Tu)	2 Huheey; 2 Rayner	Atomic Structure & Periodicity	
Jan 19	4 Rayner	Metallic Bonding	
Jan 24 (Tu)	4 Rayner	Metallic Bonding	
Jan 26	4 Huheey; 5,6 Rayner	Ionic Bonding	
Jan 31 (Tu)		<b>Quiz 1</b>	
<b>Feb 2</b>	4 Huheey; 5,6 Rayner	Ionic Bonding	
Feb 7 (Tu)	5 Huheey; 3 Rayner	Lewis Theory, VSEPR Theory	
Feb 9	5 Huheey; 3 Rayner	Valence Bond Theory, Electronegativity	
Feb 14 (Tu)	5 Huheey; 3 Rayner	Molecular Orbital Theory	
Feb 16	5 Huheey; 3 Rayner	Molecular Orbital Theory	
Feb 21 (Tu)		<b>Exam 1</b>	
Feb 23	6 Huheey	Reactions of Covalent Inorganic Molecules	
Feb 28 (Tu)		<b>No Class – Spring Break.</b>	
<b>Mar 1</b>		<b>No Class – Spring Break.</b>	
Mar 6 (Tu)	11 Huheey; 19 Rayner	Werner's Coordination Theory, Geometry	
Mar 8	11 Huheey; 19 Rayner	Geometry, Isomerism	
Mar 13 (Tu)	11 Huheey; 19 Rayner	Counting d Electrons, Nomenclature	
Mar 15	11 Huheey; 19 Rayner	Thermodynamics, 18 e Rule, Valence Bond Model	
Mar 20 (Tu)	11 Huheey; 19 Rayner	Crystal Field Theory	
Mar 22	11 Huheey; 19 Rayner	Crystal Field Theory	
Mar 27 (Tu)		<b>Exam II</b>	

<u>Date</u>	<u>Chapter</u>	<u>Topic</u>	(Tu = Tuesday)
Mar 29	11,12 Huheey	Molecular Orbital Theory of Transition Metal Complexes; Coordination Number and Geometry	
<b>April 3</b> (Tu)	13 Huheey	Reactions, Kinetics, and Mechanisms	
April 5	15 Huheey; 23 Rayner	Organometallic Chemistry	
April 10 (Tu)	15 Huheey; 23 Rayner	Organometallic Chemistry	
April 12	15 Huheey; 23 Rayner	Organometallic Chemistry	
April 17 (Tu)	19 Huheey; Class notes	Bioinorganic Chemistry	
April 19	19 Huheey; Class notes	<b>Exam III</b>	
<b>April 26</b>	<b>Final Exam</b>	<b>ACS Cumulative</b> , 1:30 PM – 4:00 PM.	

**Office Hours:** The Instructor will be available to meet with Students during scheduled office hours. Additional office hours will be arranged by appointment. Students are required to bring their notes. Walk-ins may not always be accepted.

**Academic Honesty:** The Department of Chemistry follows Georgia State University's Policy on Academic Honesty (Section 409). **Students are expected to be familiar with and to comply with this policy.** Here is a link to Section 409: <http://www2.gsu.edu/~wwwfhh/sec409.html>. All tests taken must represent your individual, unaided efforts. The following are examples of academic dishonesty: (i) to use an unauthorized homework key to complete a graded homework assignment; (ii) to sign an attendance sheet for a Student that is absent from class; (iii) to receive or offer information during an examination; (iv) to use unauthorized supplementary materials during tests; (v) to commit plagiarism on examinations and graded homework assignments (*i.e.*, the act of presenting an individual's written work as one's own, without acknowledgment of the individual). Incidents related to academic honesty will be referred to the Chemistry Department Chair for appropriate action.

**Grading:** The grading scheme will be based on 500 points and will consist of three in-class exams, an in-class quiz, a cumulative ACS standardized final, homework, and attendance.

**The projected breakdown of points will be:**

Exam I	100
Exam II	100
Exam III	100
Quiz	50
Attendance	25
Homework	25
<u>Final Exam</u>	<u>100</u>
<b>Total:</b>	<b>500 points</b>

<b><u>Projected grade cut-offs:</u></b>	A plus	96%
	A	90%
	A minus	88%
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	B plus	85%
	B	75%
	B minus	73%
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	C plus	70%
	C	65%
C minus	63%	
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D	55%	
F	less than 55%	

**Notes on Plus/Minus Grading:** Starting in Fall 2006, all Instructors have had the option to award grades on a plus/minus scale. The following quality points are used to calculate GPAs.

A+:	4.30
A:	4.00
A-:	3.70
B+:	3.30
B:	3.00
B-:	2.70
C+:	2.30
C:	2.00
C-:	1.70
D:	1.00
F:	0.00
WF:	0.00

Unless a Department or College says otherwise, Instructors have the choice as to whether or not to use pluses and minuses. As per Departmental or College policy, Instructors also decide on the criteria for the awarding of plus and minus grades. If a course requires a prerequisite of passing an earlier course with a “C”, a grade of “C-“ will not meet that prerequisite.

**Evaluations:** Student evaluations of the Instructor can be performed using the GoSOLAR/PAWS online evaluation system. Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completion of the course, please take time to fill out the online course evaluation.

**Student Accommodations:** Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services. Students may only be accommodated upon issuance by the Office of Disability Services of a signed accommodation plan and are responsible for providing a copy of that plan to Instructors of all classes in which an accommodation is sought.

**Miscellaneous:** Friday February 24<sup>th</sup> is the last day to withdraw from a class and receive a "W". Please note that any Student who enrolled in the course **without having completed** the required course prerequisites could be withdrawn from the course on this date **if your class average is a C minus or lower**. Any Students falling into this category should make arrangements to meet with the course Instructor on or before Friday February 24<sup>th</sup>.