

Winter 2010 Chemistry 222 with Dr. Michael A. Russell

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Required Materials: Chemistry *The Central Science* (11th Edition) by Brown *et al.*, ISBN 0-135-031-486
The Chemistry 222 Companion (Lab Manual, Problem Sets, etc.)
Graphing calculator (such as the TI-83, TI-89, etc.)
Bound Laboratory Notebook
Scantron Sheets for exams (50 Questions on **each** side)
Safety goggles for lab

Course Description: This course offers the fundamental basis of chemistry for science, pre-professional, chemistry and engineering majors. A strong emphasis is placed on a mathematical approach. This second term covers molecular bonding and molecular properties, gases, liquids, solids, physical states and changes of state, solutions, kinetics, and nuclear chemistry.

Prerequisites: A C or better in CH 221.

Course Philosophy: To be successful, students enrolled in a 200 level chemistry course should complete all assignments before coming to class, attend classes regularly, participate in discussions, and think critically to discover the fundamental theories inherent to this course. All homework assignments represent the *minimum* requirement for understanding the principles of chemistry. It is assumed that A and B students will perform enough *unassigned* exercises to master the concepts.

The Honor Principle: All students will be expected to behave with the highest moral and academic integrity while enrolled in this class. Plagiarism, cheating or sharing information on tests or laboratory reports, disruptive behavior, and other related offenses will be dealt with according to the directives stated in the current *Mt. Hood Community College Student Guide*.

Grading:	Midterm Exams (2 total, 130 points each)	260 points
	Quizzes (6 total, lowest quiz dropped, 20 points each)	100 points
	Lecture Final Exam	180 points
	Laboratory Final Exam	100 points
	Class Presentation	100 points
	Problem sets (6 total, 10 points each)	60 points
	Nine lab experiments (20 points each)	180 points
	Lab Completion Bonus and Notebook	20 points
	Total points:	1000 points

Tentative grading distribution: A: 90-100% B: 80-89% C: 65-79% D: 55-64% F: less than 55%
Opportunities for extra credit are available and explained in the "Extra-Credit Guide" handout.

Exams and Quizzes will be held in the recitation portion of lab. No make-up quizzes will be given. If you need to miss an exam due to illness or personal emergency, call and leave a message to assure a make-up exam. Failure to call results in a failed exam. Note that **cell phones are not allowed as a calculator substitute**, and using a cell phone results in an immediate grade of zero.

Each student will give a **Class Presentation** this term. For more information, see the handout entitled "Class Presentations FAQ".

Laboratory Safety and Etiquette rules can be found in the lab packet for this course and on the website. Information regarding **lab reports**, the mandatory **lab notebook**, the **lab completion bonus** and **missed lab sessions** can be found in the lab packet and on the course website as well.

Problem Sets: We will be using problem sets found in the CH 222 Companion, available at the bookstore. All problems should be attempted prior to class (we will be discussing them during recitation), and arriving late to a problem set session will invoke a point penalty. Late problem sets will also receive a point penalty. Details regarding problem set grading will be discussed during the first recitation of the term.

"What's Due This Week" Schedule for CH 222 Winter 2010

<u>Week</u>	<u>Dates</u>	<u>Lab Assignment</u>
1	1/5 & 1/5	<i>Begin "Titration of Water Soluble Copper Salts" and "Linear Regression" Labs - goggles required</i> <i>Introduction to the course</i>
2	1/12 & 1/13	<i>Begin "The Geometrical Structure of Covalent Molecules" Lab</i> <i>Due: <u>Problem set #1</u> Chapter 8 and Chapter 9 (9.1 - 9.3)</i> <i>Labs due: "Titration of Water Soluble Copper Salts" and "Linear Regression" (<u>Lab #1</u>)</i> <i>Take <u>Quiz #1</u></i>
3	1/21 & 1/22	<i>Begin "Valence Bond and Molecular Orbitals Lab" Lab</i> <i>Due: <u>Problem set #2</u> Chapter 9</i> <i>Lab Due: "The Geometrical Structure of Covalent Molecules" (<u>Lab #2</u>)</i> <i>Take <u>Quiz #2</u></i>
4	1/26 & 1/27	<i>Begin "Organic Chemistry" Lab</i> <i>Due: <u>Problem set #3</u> Chapter 25</i> <i>Lab Due: "Valence Bond and Molecular Orbitals Lab" (<u>Lab #3</u>)</i> <i>Take <u>Quiz #3</u></i>
5	2/2 & 2/3	EXAM #1 - Chapters 8, 9 & 25 <i>Begin "Molar Mass Determination of a Volatile Liquid" Lab - goggles required</i> <i>Lab Due: "Organic Chemistry" (<u>Lab #4</u>)</i> February 5, 9 AM: <i>Last chance to reserve a Class Presentation compound</i>
6	2/9 & 2/10	<i>Begin "Solids" Lab</i> <i>Due: <u>Problem set #4</u> Chapter 10 and Chapter 11 (11.1 - 11.4)</i> <i>Lab due: "Molar Mass Determination of a Volatile Liquid" (<u>Lab #5</u>)</i> <i>Take <u>Quiz #4</u></i>
7	2/16 & 2/17	<i>Begin "Molar Mass Determination by Freezing Point Depression" Lab - goggles required</i> <i>Due: <u>Problem set #5</u> Chapter 11 and Chapter 13</i> <i>Lab due: "Solids" (<u>Lab #6</u>)</i> <i>Take <u>Quiz #5</u></i>
8	2/23 & 2/24	EXAM #2 - Chapters 10, 11 & 13 <i>Begin "The Iodination of Acetone (Part I)" Lab</i> <i>Lab Due: "Molar Mass Determination by Freezing Point Depression" (<u>Lab #7</u>)</i> <i>Due: Peer-reviewed Class Presentation Rough Draft Paper</i>
9	3/2 & 3/3	CLASS PRESENTATIONS - <i>Final paper due at presentation</i> <i>Lab due: "The Iodination of Acetone (Part I)" (<u>Lab #8</u>)</i>
10	3/9 & 3/10	<i>Begin "The Iodination of Acetone (Part II)" Lab</i> <i>Due: <u>Problem set #6</u> Chapter 14 and Chapter 21</i> <i>Take <u>Quiz #6</u></i> <i>Lab due at time of lab final: "The Iodination of Acetone (Part II)" (<u>Lab #9</u>)</i>
11	3/16 or 3/17 3/17	LAB FINAL <i>Times to be announced - Lab Notebook due - goggles required</i> LECTURE FINAL (7:45 AM, AC 1303) - <i>Take Home Final due</i>