

**Chaminade University of Honolulu, Fall 2014**  
**CH 203 GENERAL CHEMISTRY I**  
**Syllabus**

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**Instructor:** Mr. William F. Bow

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**Lecture section:** 01

MWF 9:30-10:20 AM, Henry Hall 225, 4<sup>th</sup> hour TBA

**Office Hours:** W 10:30 - 2:30 PM or by appt.

**Required Materials:**

- Textbook: Zumdahl, "Chemistry" 9th ed., Brooks/Cole, 2014.
- Scientific calculator
- Access to Online: <https://www.edmodo.com> (Group Code: s4ffrh)

**Course Description and Objectives:**

CH 203 is the first half of a two semester, college-level, general chemistry course. The second semester is CH 204. This course will introduce you to the fundamental principles and models of chemistry necessary for an understanding of the composition, structure, and properties of matter and the changes that matter undergoes. CH 203/204 is suitable for students planning careers in science, medicine, engineering or other areas requiring an extensive background in chemistry. The class periods will consist of lecture/discussion with an emphasis on problem solving, and so it is important that you bring a calculator and writing materials to each meeting. *4 credits*  
*Prerequisites: MA 103. Concurrent registration in CH 203L required.*

Upon successful completion of CH 203, the student will demonstrate the ability to:

- Determine the number of subatomic particles in a given isotope of any element.
- Write chemical formulas and give the chemical name of ionic and simple molecular compounds.
- Understand and apply the mole concept in a variety of chemical calculations, including the calculation of the number of particles in a given mass of substance, and the quantitative relationship between reactants and products in a chemical reaction.
- Recognize the different types of chemical reactions: acid-base, precipitation, and redox reactions.
- Understand the basic principles of energy transfer involving chemical systems, including the First Law of Thermodynamics and the application of Hess's Law.
- Understand the various models of atomic structure and the basic principles of quantum theory.
- Write ground-state electron configurations for atoms and ions of any representative element and the 3d transition metals.
- Explain the differences in ionic and covalent bonding in compounds.
- Draw electron dot structures for simple molecules.
- Describe the molecular geometry of simple molecules.
- Determine orbital hybridization of simple molecules.

**Peer-Led Team Learning (PLTL) Workshops:** The fourth hour for this course will consist of weekly meetings of small groups of students with a peer leader. You will be working on assignments designed to improve your problem-solving skills and reinforce your understanding of the course material. The group meeting times will be discussed in lecture.

**Homework:** Homework problems from each chapter will be assigned (in-class or online) and done on paper which can be turned in. They will be due in class and graded by specific dates (to be announced).

**Worksheets:** There will be multiple worksheets handed out this semester. You are encouraged to work in groups or with a tutor to complete them and understand the material covered. Worksheets turned in late will not be accepted for a grade. An answer key will be posted.

**Midterm Exams:** There will be three midterm exams given this semester (worth 45% of your overall grade). Each exam will be worth 15% of your overall grade and you will be responsible for all lecture material covered up to the exam dates. These exams are tentatively scheduled to be taken on **September 26, October 27, and November 21**. More information about these exams will be given in class.

**Quizzes:** There will be quizzes given this semester and taken in class or online. The dates of each quiz will be announced at least one lecture prior. Online quizzes will be based on chapter readings before beginning new sections. In-class quizzes will cover chapter material and will generally be given after a homework assignment is due; *these quizzes will be based on the homework*.

**Final Exam:** The final exam is scheduled for the week of December 8th. Please check that you have no conflicts (work, plane tickets home, etc) that will prevent you from taking the final at the scheduled time. This exam will be cumulative, covering all of the material presented in class over the semester.

**Attendance:** If you miss a lecture, please send me an email or leave a phone message explaining your absence. If you miss a quiz or midterm exam, a written explanation should be turned in or you will receive a score of zero. Any student who does not take the final exam will fail the course.

**Student Conduct:** Please refer to the Student Handbook for the CUH policies on Classroom Behavior and Academic Dishonesty.

**Music Devices and Cell phones:** Unless specifically allowed by the instructor, the use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade. It can be discourteous and may lead to suspicion of academic misconduct. Students who cannot comply with this rule will be asked to leave class. Please refer any questions to the Dean of Natural Sciences and Mathematics.

**ADA Accommodations:** Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the CUH Counseling Center (Dr. June Yasuhara; phone 735-4845) by the end of week three of the class, in order for the instructor to plan accordingly. Failure to provide written documentation will prevent your instructor from making the necessary accommodations. Please refer any questions to the Dean of Students and review the procedures at [http://www.chaminade.edu/student\\_life/sss/counseling\\_services.php](http://www.chaminade.edu/student_life/sss/counseling_services.php).

**Opportunities for Help:** If you need assistance with the material for this course, come to my office for help! I have set office hours, but I am often available at other times. Feel free to drop by, phone, or send me an email (using your Chaminade account) to set up a specific appointment. There are also chemistry tutors available at the AAP.

**Course Grades:** The course grades will be based on the following weighted percentages and grading scale. Any changes will be announced in class.

PLTL attendance	10%
Worksheets/Homework	5%
Quizzes	10%
Midterm Exams	45% (15% each exam)
Final Exam	30%

	FINAL
GRADE	PERCENTAGE
A	90-100 %
B	80-89 %
C	65-79 %
D	45-64 %
Fail	below 45 %

**Fall 2014 CH 203 Course Schedule:**

WEEK	DATE	TOPICS	QUIZ
1	8/25	Course information	
	8/27	<b>Ch. 1 Chemical Foundations</b> Classification of Matter, Measurements	
	8/29	<i>To be announced</i>	
2	9/1	<i>Holiday</i>	
	9/3	Dimensional Analysis, Temperature, Density	
	9/5	<b>Ch. 2 Atoms, Molecules and Ions</b> Atomic Theory, Atomic Structure, Atomic Numbers, Mass Numbers	1
3	9/8	Molecules and Ions, Periodic Table	
	9/10	Naming Simple Compounds	2
	9/12	<b>Ch. 3 Stoichiometry</b> Balancing Chemical Equations	3
4	9/15	Formula Weights, Moles, Molar Mass	
	9/17	Empirical Formulas, Percent Composition	4
	9/19	Stoichiometric Calculations	
5	9/22	Limiting Reagents, Percent Yield	5
	9/24	<b>Ch. 4 Types of Chemical Reactions and Solution Stoichiometry</b> Solutions, Strong and Weak Electrolytes	
	9/26	<b>Exam I</b>	
6	9/29	Concentration Calculations	
	10/1	Precipitation Reactions, Ionic Equations	6
	10/3	Acid-Base Reactions	
7	10/6	Oxidation-Reduction Reactions	7
	10/8	Balancing Redox Reactions	
	10/10	<b>Ch. 5 Gases</b> Pressure, Properties of a Gas	8
8	10/13	<i>Holiday</i>	
	10/15	Ideal Gas Law	
	10/17	Gas Stoichiometry, Dalton's Law of Partial Pressures	9

9	10/20	Kinetic Molecular Theory of Gases, Real Gases	
	10/22	<b>Ch. 6 Thermochemistry</b> Energy, First Law of Thermodynamics	10
	10/24	Enthalpy and Calorimetry	
10	10/27	<b>Exam II</b>	
	10/29	Heat of Reaction, Hess's Law	
	10/31	Standard Heats of Formation	11
11	11/3	<b>Ch. 7 Atomic Structure and Periodicity</b> Electromagnetic Radiation	
	11/5	Wave Properties, Photoelectric Effect	12
	11/7	Hydrogen Spectrum, Bohr Model of the Atom	
12	11/10	deBroglie Wavelength, Uncertainty Principle	
	11/12	Quantum Mechanical Model of the Atom	13
	11/14	Atomic Orbitals, Aufbau Principle, Electron Configurations	
13	11/17	Periodic Trends	14
	11/19	<b>Ch. 8 Basic Concepts of Chemical Bonding</b> Ionic Bonds, Lattice Energy	
	11/21	<b>Exam III</b>	
14	11/24	Covalent Bonds, Electronegativity, Bond Polarity	
	11/26	Lewis Structures, Octet Rule	15
	11/28	<i>Holiday</i>	
15	12/1	Resonance Structures	
	12/3	Bond Enthalpies	
	12/5	Course Assessment	
		<b>Final Exam</b>	
		Week of December 8th	