

# Course Syllabus

## Chemistry 203: General Chemistry I

### Department of Chemistry, Marshall University

### Fall 2014

**Instructor:** Dr. Hasan El-Rifai

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**Credit:** 3.00 hours

**Course Time & Location:**

Lectures 7:30 – 9:50 PM (W)

Location Seville Building

**Required Texts:**

The text for this course is Hein, Pattison, Arena, Best: ***Introduction to General, Organic, and Biochemistry, 9th Edition***, published by John Wiley and Sons. There are several options for purchasing this text. You can buy it as a printed book or as an electronic book. It doesn't matter which version you use because they all have the exact same content and the page numbers and such are the same in all versions. You do not need any supplemental materials, all you need is the text book. If you plan to take CHM 204 you will want to keep the book at the end of the semester because we will be using the same text for CHM 204 next semester.

The traditional bound version of the text is ISBN 978-0-470-12925-8. This book will be available at both the Marshall Bookstore and at Stationers. Used books will probably be in very short supply because the copyright date on the book is 2009.

Both the Marshall Bookstore and Stationers have also been requested to stock the Binder Ready Version (ISBN 978-0-470-39224-9). This is an unbound, three-hole punched, printed copy of the text. It costs roughly 2/3 as much as the bound version but you probably will not be able to sell it back at the end of the course.

The book is also available as the Desktop Edition E-Book directly from John Wiley and Sons at <http://he-cda.wiley.com/WileyCDA/HigherEdTitle/productCd-0470129255,courseCd-CH0200,pageType-techsol,page-16.html> Cost for this version is roughly \$100. With this version you download the book once onto your computer and then can use it as long as you like but you can only use it on that one computer. You can print sections of the book within limits and you can make notes and highlights.

The electronic book is also available in a CourseSmart edition - see <http://he-cda.wiley.com/WileyCDA/HigherEdTitle/productCd-0470129255,courseCd-CH0200,pageType-techsol,page-15.html> for details. Cost for this version is roughly \$85. The CourseSmart version is a 360 day subscription to a web site that has the entire book available. You can access the site from any computer that has internet access. You can print sections of the book within limits.

**Required Materials:** Scientific Calculator

**Catalog Description:** An introduction to chemical science, its' development, basic concepts and interrelationships with other sciences. This course is intended primarily for non-science majors and B.A. degree candidates.

**Course Curriculum:** Lectures and assignments will cover chapters 1 through 18 in the text (tentative).

**Important Learning Objectives:**

- To learn accepted protocol for making scientific measurements and stating numeric values, in terms of unit labels, specifying levels of accuracy, and the use of scientific notation.
- To learn about basic physical properties of substances and the fundamental forces that drive chemical and physical processes.
- To understand the basic structure of atoms and how atoms bond together to form molecules and other compounds.
- To understand how the chemical structure of a compound determines the chemical and physical properties of that substance.
- To learn the basic calculations involved in predicting the amount of reagent needed for a reaction and the amount of product that can be obtained from a reaction.
- To learn about acid-base chemistry, what affects the relative strengths of acids and bases and how they react with other substances.
- To understand how chemical buffers work to establish chemical balance, particularly in living organisms.
- To be introduced to the topic of nuclear reactions and the techniques of nuclear medicine used to for medical diagnoses and treatment.

**Determination of Course Grade:**

Exam1:	20 %
Exam2:	20 %
Exam3:	20 %
Quizzes / Homework:	20 %
Comprehensive Final Exam:	20%

Course Grade Assignment (The letter grade is based on percent of grade points earned.)

Scale	A: 90-100%
	B: 80-89.9%
	C: 70-79.9%
	D: 60-69.9%
	F: < 60%

**Tentative Exam Schedule\***

<u>Exam</u>	<u>Date</u>	<u>Chapters</u>
Exam I	TBA	1, 2, 3, 4, 5, 6
Exam II	TBA	7, 8, 9, 12
Exam III	TBA	10, 11, 13, 14

**\*The exam date will be assigned 1 week in advance.**

**Comprehensive Final Exam:**

**7:30 – 9:50 PM                      Wednesday December 10, 2014 (Chapters 1 through 18)**

**Topics to Be Covered in This Course: (Tentative)****Section I**

Chapter 1: An Introduction to Chemistry  
Chapter 2: Standards for Measurement  
Chapter 3: Elements and Compounds  
Chapter 4: Properties of Matter  
Chapter 5: Early Atomic Theory & Structure  
Chapter 6: Nomenclature of Inorganic Compounds

**Section II**

Chapter 7: Quantitative Composition of Compounds  
Chapter 8: Chemical Equations  
Chapter 9: Calculations from Chemical Equations  
Chapter 12: The Gaseous State of Matter

**Section III**

Chapter 10: Modern Atomic Theory & the Periodic Table  
Chapter 11: Chemical Bonds: The Formation of Compounds from Atoms  
Chapter 13: Properties of Liquids  
Chapter 14: Solutions

**Section IV**

Chapter 15: Acids, Bases, and Salts  
Chapter 16: Chemical Equilibrium  
Chapter 17: Oxidation-Reduction  
Chapter 18: Nuclear Chemistry

**Policies**

The instructor will adhere to the University Policies and Procedures described in the Marshall University General Undergraduate Catalog. The items listed below are of special significance.

*Attendance:* I strongly encourage you to come to class so that you can more fully understand the material that you will read in the book. If you are absent, obtain the notes from another student. In situations where the student is aware of the absence for an exam in advance, arrangement for accommodations must be made prior to the absence. Otherwise, the designation of an absence as excused and any accommodation for that absence will be decided by the Dean of Students. There will be no make-up quizzes. If a student decides to not complete the course, he or she must visit the registrar and complete the appropriate paperwork to remove the course from his or her schedule.

Special Note for Summer: Taking this course in a 4-week summer session is a full-time job. Do not get behind; do not be distracted by other activities; do not wait to get help if it is needed (and it will be); constantly bear in mind that the material is cumulative, so that one must master each part to be successful with the next.

Many of the questions on exams will be similar in nature to the problems solved in class. Bear in mind that one must avoid memorizing specific answers to specific problems: the point is to be able to use information that you have learned or that you are given to solve any example of a

particular type of problem. There is a certain body of information (facts, rules, etc.) that must be learned (i.e., memorized) in order to be able to solve problems.

*Electronic Device Policy:* All cell phones and pagers must be turned **OFF** during class. Laptops must be turned off and placed on the floor during the lecture period. During examinations, all electronic devices except calculators must be inaccessible. Students **MUST BRING A CALCULATOR** to class for all lectures and exams. Calculators that are part of a cell phone or PDA are **not** acceptable during an exam or homework quiz.

*Academic Dishonesty Policy:* Marshall University's academic dishonesty policy (<http://www.marshall.edu/academicaffairs/Academic%20Dishonesty%20Policy.pdf>) will be enforced.

*Policy for Students with Disabilities:* Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.