GENERAL CHEMISTRY
CHEM 1010-3
FALL, 2013

Instructor: Dr. Todd A. Wells
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Text: Chemistry, 6th Edition, Silberberg
Lectures: 8-8:50 am, MWF, Olin 105
Discussion: 8-8:50 a, Thur, TBD (REQUIRED)
Office Hours: Announced First Week of Class

REQUIRED COURSE ITEMS

Textbook: *Chemistry: The molecular nature of matter and change*, 6th Edition, Martin S. Silberberg (2012) McGraw-Hill (available at the DU Bookstore). The 5th edition is also acceptable; however, a Connect Plus license from McGraw-Hill is still required.

Online Homework: A Connect Plus license is required for the course. When you purchase your textbook at the DU Bookstore, this license is included. If you already have a text, you can purchase a license directly online from McGraw-Hill. This option will be made available when you attempt the first online assignment.

Calculator: A calculator with the following capabilities is required: square roots, logarithms, and exponential (scientific) notation operations. You will be permitted to use your calculator for quizzes, and exams. NO PHONES WILL BE PERMITTED ON QUIZZES OR EXAMS.

READINGS – You have been provided a tentative lecture schedule. You should read the material and do any associated online components prior to coming to class.

CLASS MEETINGS – For the most part we will follow the same format every week. Monday I will introduces the major concepts; these discussions will continue on Wednesday and there may be online lectures used to supplement these discussions. On Thursday, students will work in small groups to complete in-class activities. Attendance at these sessions is mandatory, and work will be collected and graded. Depending on the progress of the course, in-class activities may also occur on Wednesday. Each Friday's class meeting will begin with a short quiz, followed by a wrap-up of the week. Every 3 weeks an exam will be given on Friday.

ON-LINE COMPONENTS - Some topics in this course will not be covered in lecture sessions; rather these topics will be introduced and made available online. Often this type of course is referred to as a "hybrid" or "blended" course. What this means is that part of your instruction and learning will occur outside of the class, directed by materials and resources found on the Blackboard site for the course. There will be three (3) areas of this course where your learning will be facilitated using online technology. First, weekly online homework will be assigned using the Connect Plus system that is linked to this course. These assignments will be graded. With the exception of the 1st and 10th week, these assignments will be due every Wednesday at 11:59PM (Mountain time). Second, an adaptive learning program, LearnSmart, is provided in the Connect Plus system. In addition to the weekly online homework, you will be required to complete at least one LearnSmart activity each week. These modules test your understanding of chemical concepts, and the program will lead you through a series of questions depending on how confident you are in your answers and if you answer the questions correctly. Completion of LearnSmart activities are required and you will receive credit when you complete them **on time**; however, you will not be graded on how "fast" you get through or how many questions you answered correctly in the activity. Typically, completion of the LearnSmart activities will be required by Thursday at 11:59PM

(Mountain time). The third online component will be short review sessions covering topics I expect you already understand from previous chemistry or science courses you have completed or will supplement material I covered in class. These will include short readings and/or videos, and assigned homework. These sessions are optional; however, I encourage everyone to at least attempt the homework since they are representative of questions that cover material I expect you already know and understand.

IN-CLASS ACTIVITIES/QUIZZES - In-class activities will allow you to apply your knowledge. These activities may be more challenging than the assigned homework. You will work in small groups to complete these activities. Short quizzes (5-10 minutes) will be given on most Fridays to assess the progress of everyone in the class. Both the in-class activities and quizzes will be graded. In addition, a knowledge assessment will be given the first Friday of the course. This is to help me better understand your background knowledge in the course and better tailor the course to best meet the needs of all students. You will receive credit for completing this assessment.

EXAMS - There will be three (3) one-hour exams given during the quarter and a two-hour, cumulative final exam. Dates for these exams are posted on the tentative lecture schedule. NO MAKE-UP EXAMS WILL BE GIVEN. There is one exception to this policy. If you will be out of town for a University sanctioned function (e.g., athletic team or music group), you are responsible for making arrangements with Dr. Wells at least one week in advance and complete the exam prior to the scheduled date. If you miss an exam, then your final exam will be counted twice to replace the missed exam.

If you take all three, hour exams AND your grade on your final exam is higher than one of your hour exams, then your final exam will be counted twice to replace your lowest hour exam grade.

GRADES - Final grades will be determined according to your performance on the exams, online homework, LearnSmart and in-class activities/quizzes. Cooperative learning is encouraged. As such, I will not grade on a curve. If most students do well, there will be a significant number of higher grades. The opposite, however, can also be true! Your final grade will be determined on a maximum of 1100 points with the following components:

Component	**Points**
Hour Exams (200 points each)	600
Final Exam	200
Online Homework	100
LearnSmart modules	100
In-class activities/quizzes/assessment	100
Total Points	1100

Projected Grade Ranges

A	≥ 94%	B-	≥ 78%	D+	≥ 64%
A-	≥ 90%	C+	≥ 75%	D	≥ 58%
B+	≥ 86%	C	≥ 72%	D-	≥ 55%
B	≥ 82%	C-	≥ 68%		

CELLULAR PHONE AND LAPTOP POLICY - I respect the need for each individual to stay in contact with family and friends. The use of cellular phones, however, is disrupting to the learning environment. Thus, I request that the ringers of all cellular phones be muted during class. I include my phone in this requirement. If an emergency arises, and you need to make or take a call on your phone, I request that you quietly leave the room and conduct your conversation out in the hallway. Laptops can also be quite disrupting in class; therefore, ONLY laptops used for taking notes will be allowed. If you use your laptop, I might request that a copy of your notes be emailed to me at the end of class.

LECTURE AND TESTING ACCOMODATIONS - If you have a disability/medical issue protected under the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act and need to request accommodations, please make an appointment with the Disability Services Program (DSP); 303.871.2372/ 2278/ 7432; located on the 4th floor of Ruffatto Hall; 1999 E. Evans Ave. Information is also available on line at http://www.du.edu/disability/dsp. See the Handbook for Students with Disabilities.

Any student who feels they may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Disability Services Program.

If you qualify for academic accommodations because of a disability or medical issue please submit a Faculty Letter to me from Disability Services Program (DSP) in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities/medical issues.

RELIGIOUS ACCOMODATIONS. It is University policy to grant students excused absences from class or other organized activities for the observance of religious holy days, unless the accommodation would create an undue hardship. I will do my best to accommodate your requests if you make arrangement with me *in advance* of your absence. Please examine the course syllabus, including the tentative schedule, for any potential conflicts with holy days and notify me prior to the end of the second week of classes of conflicts that may require your absence from class and/or prevent you from completing an assignment. I have included the link to the Religious Accommodations Policy for your reference. More information can be found at
http://www.du.edu/studentlife/religiouslife/DU_religious_accommodations_policy.html.

***TENTATIVE LECTURE SCHEDULE (9.6.2013)**

DATE	**TOPIC**	**READING**
WEEK 1		
QUANTUM-MECHANICAL MODEL OF THE ATOM		
Sept. 9	Introduction/Nature of Light	1.1, 7.1
11	Atomic spectra/Quantum-Mechanical Model	7.2-7.4
12	Many-Electron Atoms	8.1
13	Knowledge assessment	
Online Review Session I		
WEEK 2		
CHEMICAL PERIODICITY		
16	Periodic Table	2.6, 8.2
18	Atomic Trends and Properties	8.3, 8.4
19	Discussion	
20	Chemical Reactivity	8.4
Online Review Session II		
WEEK 3		
CHEMICAL BONDING AND MOLECULAR SHAPE		
23	Ionic Bonding	2.7, 9.1-9.2
25	Covalent Bonding	9.3
26	Discussion	
27	HOUR EXAM I (Covers Sep 9 - 25)	
Online Review Session III		

WEEK 4

30	Lewis Structures	10.1
Oct. 2	VSEPR Theory	10.2
3	Discussion	
4	Bond and Molecular Polarity	9.5, 10.3

Online Review Session IV

WEEK 5

7	Valence Bond Theory	11.1
9	Types of Covalent Bonds	11.2
10	Discussion	
11	Molecular Orbital Theory	11.3

WEEK 6

CHEMICAL REACTIONS

14	Water as a Solvent	4.1
16	Aqueous ionic and Precipitation Reactions	4.2-4.3
17	Discussion	
18	HOUR EXAM II (Covers Sep 9 – Oct 16)	

Last day for Automatic Withdraw

Online Review Session V

WEEK 7

21	Acid-Base Reactions, and pH	4.4, 18.1-18.2
23	Oxidation-Reduction Reactions	4.5-4.6
24	Discussion	
25	Balancing Redox Reactions	21.1

Online Review Session VI

WEEK 8

THERMOCHEMISTRY AND THERMODYNAMICS

28	Enthalpy	6.1-6.2
30	Calorimetry	6.3-6.4
31	Discussion	
Nov. 1	Heats of Reaction	6.5-6.6

WEEK 9

4	Heats of Reaction (continued)	9.4
6	Entropy	20.1
7	Discussion	
8	HOUR EXAM III (Covers Sep 9 – Nov 6)	

WEEK 10

11	Entropy (continued) and Free energy	20.2-20.3
13	Free energy	20.3
14	Discussion	
15	Voltaic cells and cell potential	21.2-21.3

Nov 18 FINAL EXAM (Cumulative)

* Tentative means that this is my best approximation of the schedule for the quarter. Actual lecture topics and materials may change.