General Chemistry I - 1314
CHEM 1010 Section 01
Summer Quarter, 2019

Instructor: Ogar Ichire (Leo) Ph.D.

E-mail: ogar.ichire@du.edu | **Phone:** 303.871.2985 | **Office:** F.W Olin 205A

Lecture: MTWRF 9:20 p.m. – 12:20 p.m. (F.W. Olin 205)

Office Hours: Open door or by appointment. Please email for appointments.

Required Text: ***Chemistry: The Molecular Nature of Matter and Change*** - *8th Edition by* Martin Silberberg (Author), Patricia Amateis.

Course Objective:
This course is the first half of the first-year general chemistry sequence for chemistry and non-chemistry majors, and so one major objective of the course is to provide you with a firm foundation on basic chemical principles that you will meet and use in higher level chemistry classes. These concepts will help you understand advanced topics in chemistry and how basic chemical principles control structure, function, and application of molecules and compounds in chemistry. We will also investigate the scope and limitations of our understanding of these fundamental concepts. But the major objective of the course is to build your understanding of matter – its atomic and molecular representation, molecular structure, reaction and interaction, energy, and function.
The Silberberg textbook will be our guide in exploring the nature of matter and the course will follow the general progression of the book, but we will choose chapters in a sequence that allows us to sequentially shape our understanding of concepts one at a time. Also, the evolution of each chapter material and our comprehension of the course materials will be based on the Blooms Taxonomy, which can be summarized under the following cognitive levels of learning:

- **Lower Level**: learn, understand, and recall chemistry concepts.
- **Lower Medium Level**: apply the knowledge and concepts learned to solve simple problems.
- **Higher Medium Level**: draw connections between concepts – that is the ability to differentiate, organize, isolate, integrate and use the right critical thinking process and concepts to solve composite and challenging problems.
- **High Level**: Analyze and evaluate each solved problem based on your knowledge of the chemical concepts – this means understanding is key to learning and solving problems in chemistry.

Once at the High Level of cognitive reasoning, I believe you would have gained a good understanding of the basic chemical principles used by chemist and scientist to investigate various chemical systems and understand how they work. Lastly, it is expected that a strong knowledge base from this course can help lower the learning curve for upper-level chemistry courses, so take learning seriously in this course.

In order to get the most out of this course, I advise you:

- Review Silberberg textbook before and after each class. Preferable, read the whole chapter before class.
- Conduct searches after each class to find applications of the chemistry covered in class.
- Solve as many problems as possible instead of memorizing. This means that consistent work is required and will pay off much better than cramming for an exam or throwing together an assignment the last minute. Solving problems is one good way to understand chemical principles, and it also exposes the scope and limitation of each concept learned – memorizing does not.

Lectures: The lectures will generally follow the chapters of the textbook. Most lectures will be presented on the board and PowerPoint slides. ***Attending every class and taking meaningful notes is incredibly important for this class.*** Keeping up with the reading will help you understand the lectures better and take more meaningful notes. Also, we will work through problems during lectures to help you understand each concept and build the necessary problem-solving skills required to excel in the class.

Problems: You should work as many problems from the text as possible. The exams will focus on simple, applied and composite problems. Most composite type problems require a good understanding of various concepts and your ability to connect two or more concepts together to arrive at a solution. The only way to prepare for these problems is to practice, practice, and practice. All problem types can be found in your textbook, and additional problems will be presented in class. **A good strategy to studying, in general, may be to solve all the odd-numbered problems initially, and then the even ones as part of your exam review**. You are advised to keep a separate, dedicated notebook with all your solved problem for this course – it will make studying a lot easier and will come in handy for quick revision before exams.

Also, solving problems together can be very helpful and I encourage you to go over solutions to problems in small groups after working the problems independently. Your classmates may have an alternate way of looking at a problem, and this can add to your toolbox of problem-solving skills. In addition, helping to teach the subject to your course mates is one way to understand the concepts yourself.

Calculator: Any simple or graphing calculator would be sufficient for calculations covered in this course. Your calculator should be capable of scientific notation, log, and exponential functions. If a graphing calculator is used, you must clear the memory before receiving the exam. On a typical TI-XX graphing calculator, the sequence is to press 2nd

then '+' (MEM), then Reset, All RAM, Reset. A message will be displayed as RAM Cleared. This must be displayed before receiving the exam. I may inspect calculators and their memory during the exams.

Exams: There will be two midterm exams each worth 100 points and a final exam also worth 100 points – a total of 300 points. If your final exam score is higher than either midterm exam score, the lowest midterm will be dropped, and the final will replace that midterm.

Final Grade: Your final grade will be determined out of the 300 available points earned **There will be no makeup exams.** If you miss an exam for any reason, that exam will be dropped and the final will count for 200 points**. The final exam is not optional – NO EXCEPTION**

Grade	Range	Grade	Range
A	**100 – 94 %**	**C-**	**<74 – 70%**
A-	**<94 – 90%**	**D+**	**<70 – 67%**
B+	**<90 – 87%**	**D**	**<67 – 64%**
B	**<87 – 84%**	**D-**	**<64 – 61%**
B-	**<84 – 80%**	**F**	**<60 – 0%**
C+	**<80 – 77%**		
C	**<77 – 74%**		

Note: Final grades and percentage ranges are subject to change by the instructor

Cell Phone and Electronic Device Policy:
While I understand that mobile devices have become integral to our lives, they are disruptive to the learning environment. Therefore, I request that all electronic devices be turned off (not muted) during class (i.e.; please don't text/Facebook/Snapchat/Tweet during class). If an emergency arises, and you need to contact the outside world during our lecture or recitation time, I request that you quietly leave the room and conduct your conversation outside. Additionally, most of our lectures will require far too much structural drawing for effective notes to be taken on a laptop, so please leave these devices turned off during lectures.

Lecture and Testing Accommodations:
I will make every effort to accommodate students diagnosed with a learning disability. I will do this in complete confidence. I do, however, request that any student requiring these accommodations inform me the first week of class. For further information, please see the University Disability Services' website at http://www.du.edu/disability/dsp/index.html.

Academic Integrity:
While I advocate collaborative learning and teamwork, I also firmly believe that each individual should maintain the highest ethical standards. As such, I support and will strictly enforce the Honor Code of the University of Denver. www.du.edu/honorcode.

Honor Code Statement.
All members of the University of Denver are expected to uphold the values of *Integrity*, *Respect*, and *Responsibility*. These values embody the standards of conduct for students, staff, faculty, and administrators as members of the University community. These values are defined as:

Integrity: acting in an honest and ethical manner;
Respect: honoring differences in people, ideas, and opinions;
Responsibility: accepting ownership for one's own conduct.

Pioneer Pledge.
As a University of Denver Pioneer I pledge…

- to act with INTEGRITY and pursue academic excellence;
- to RESPECT differences in people, ideas, and opinions and;
- to accept my RESPONSIBILITY as a local and global citizen;

Because I take pride in the University of Denver I will uphold the *Honor Code* and encourage others to follow my example.

Topics to be covered: Tentative Course Schedule – Subject to Change

Weeks	Date'19	Topic	Reading	Due
Wk1	M - 06/19	Chapter 2: The Components of Matter	Ch1&2	
		Chapter 7: Quantum Theory and Atomic Structure	Ch7 7.0-7.4	
		Chapter 8: Electronic Configuration	Ch8 8.0-8.4	
	F - 06/21	**Exam 1**		
Wk2				
	M - 06/24	Chapter 9: Models of Chemical Bonding	Ch9 9.0-9.5, 2.8,	
		Chapter 10 & 11: The Shapes of Molecules and Theories of Bonding	Ch10 & 11 10.1-10.3	
			11 – 11.3	
		Chapter 3: Stoichiometry Formulas and Equations	Ch3 3.1 – 3.4	
		Chapter 4: Major Classes of Chemical Reactions	Ch4 4.1 – 4.6	
	F - 06/28	**Exam 2 (Cumulative)**		
Wk3				
	M - 07/01	Chapter 5: Gases and The Kinetic Theory	Ch5 5.1 – 5.5	
		Chapter 6: Thermodynamics: Energy Flow and Chemical Change	Ch6 6.1 – 6.6	
	F – 07/05	**Final Exam (Cumulative)**		

Canvas and Class Notes:

Lecture information will be presented on the board as well as PowerPoint slides. the slides will be posted on Canvas in addition to other useful learning materials including suggested problems and assignments.