Lo-Chem-1A-44Z-W21 **Course Outline**

INSTRUCTOR: Dr. Billie Lo lobillie@fhda.edu
Lecture: Tues/THurs 6:00 – 7:15PM
Laboratory: Section 44Z: T/Thurs 2:30 – 5:20 PM
Section 46Z: T/Thurs 7:30 – 10:20 PM Dr. Billie Lo
Credit: 5 units

PREREQUISITE:
Chem. 25 with a C or better or high school chemistry with a B or better, Math C or higher.

ACCEPTABLE FOR CREDIT:
University of California, California State University and Colleges.

COURSE DESCRIPTION:

Chem 1A is a pre-professional chemistry preparation for students planning a scientific or science related career field. A rigorous study of the fundamentals of chemistry at the first year level combines the study of atomic and molecular structure, quantum theory, thermochemistry, solutions, and stoichiometric calculations of product and reactant amounts and the classical study of properties of atoms and molecules and their reactivities.

The course includes both lecture and lab work designed to prepare students to enter as chemistry, engineering, medicine, dentistry as well as biological science.

Due to corona virus situation, this class will be an online class for the Spring quarter, which means you do not have to be on campus to complete any portion of it. You will participate in the course using De Anza college CANVAS. and zoom. Student should have access a computer, or a smart phone with internet connection, Refer to Student Hub the De Anza Online Resources for Students on the De Anza web site, http://www.deanza.edu/online-Spring Student Resource Hub to see how to join the Zoom lecture or the lab sessions. You may also use De Anza Library Chat room for help. If you have any specific needs I should be aware of. Please let me know. The PCC Disabled Students Programs and Services is available to assist you during this course.

TEXTS:
Chemistry, The Molecular Nature of Matter and Change, Martin Silberberg, McGraw Hill,9th edition.

How to purchase CONNECT ACCESS CODE with ebook included: Watch the "Connect Registration Video" http://video.mhhe.com/watch/4q72PpEpzkXAd3hW4o52c8 it will bring you to registration and purchasing the Connect Access (with an ebook included) at a discounted price ($45/quarter or $90/yr).

If you already have an access code, here is **Silberberg, 9th ed**.Chem 1A-ISBN: 9781307600940-$30

Simple Scientific Calculator (non-programmable), **Safety goggles are required for the class.**

Laboratory -HOL/Virtual Labs

HOL (Hands-On-Lab) will be used for this quarter. The HOL kits will be supplied by De Anza College free of charge to all enrolled students including shipping cost; however, you need to wait until after the Census Day (1/21) when the enrollment is finalized to order your HOL kits from the de Anza Bookstore. For international students, make sure you request expedite shipping and you are responsible for custom clearance in your country. All chemicals are less than 5 ml. Because of the uncertainty of arrival date of your kit. The experiment schedules are still tentative. We will adjust it as needed. Backup virtual labs are listed in the lab schedule in all cases. We are trying our best to provide some lab work during this Covid-19 pandemic

Additional reference can be found in the De Anza Lab manual which would be our lab manual if this were a in-person class, https://www.deanza.edu/chemistry/pdf/1A/Experiments Click on the Experiments and download the details for each experiment for reference when needed. Details will be posted in Canvas.

Academic Integraty is strictly observed; dishonesty will be ground for dismissal from the course. This is an online class. The zoom meeting room is equivalent to your inperson classroom. Attending the zoom session is a must All the exams must be taken in the zoom meeting room.

BASIS OF EVALUATION

A. Quizzes (Approx. 10 - 15 minutes):
Occasional quizzes may be given as needed.

B. **Hourly Exam**:
Three hourly exams will be given during the quarter. Make-up exam shall be given for serious and compelling reasons only. Consult your instructor PRIOR TO **EXAM TIME** by all means. There will be; 10% deduction in grade points for all the first make-up exams, and 20% deduction for second make-up exam, etc.

C. **Final Exam:**
A comprehensive final exam will be given. Student who miss or fail the final exam will not receive a grade C or better.

D. **Homework**
E.
The "Connect"**on-line homework assignments** are divided into two different parts for each Chapter – the conceptual and the selected end of the chapter problems. **The advantage of doing them on-line is that you can get instant feedback or online tutoring when make a mistake or when you need help. You are encouraged to use the "help" or "hint" on-line to .**help you understand the materials better, and get better grades**.** Feel free to **open** the finished assignments for reviewing purpose. Even though your score maybe lowered temporarily each time when you reopen the assignment, yet the final performance reports sum up **only** your highest score for each chapter. You should try to do a few problems each day**.** The due day is usually set right on or only a few days after the chapter lecture is done. On

completion of 60% of the total assigned homework you will get 15 **points** Connect grade for the chapter. Each chapter assignment is set to open for 2 to 3 weeks. No extension will be granted to individual student. An access code is required to do the "Connect" homework. It is important for you to purchase your access code with ebook and start working on the assignments as soon as possible..

Attendance:

Attendance will be enforced**. Any student who has two or more lab or lecture absences may be dropped from the course.**

. **Grading**:

Lecture Grade: 70%

Exams	330
Connect home work**	120
Final exam	250 .

Lab Grade: 30%

Lab Midterm and Lab Final	140 points
Lab Reports	120
Lab Participation	40
Total	1000 points

>1000 pts – A+, 880+ pts A, 780 + pts B, 650+pts C, 500+pts D

G. Worksheet schedule: Extra points

Three worksheet assignments will be given, up to 10 points each. Worksheets will be graded according to accuracy and neatness. Points will be deducted if late (-10% for each additional class day.)

Worksheet #	Content	Chapter	Date open	Date Due
1	Concentration units, Acid Base	3	1/19/20	11/27/21
2	Net Ion Equations	4	1/28/21	2/4/21
3	Geometry (shape)	9,10,11	3/9/21	3/16/21

CHEMISTRY 1A TENTATIVE LECTURE AND EXAM SCHEDULE

Wk	Date	Text	Lecture	Lab
1	1/5/21 Tue	Chapter 1	Measurement, Units, Uncertainty, Precision and Accuracy, Scientific Notation	Orientation, CONNECT sign in, Canvas,
	1/7/21	Chapter 1 Chapter 2	Mathematical Treatment of Measurement Results, Atomic Theory, Atomic Structure	Scientific Notation, Unit Analysis. (Report 1)
2	1/12/21	Chapter 2	Atomic Theory, Atomic Structure	Nomenclature (Report 2)
	1/14/21	Chapter 2 Chapter 3	continue Stoichiometry of Formula and Equations	Nomenclature (Report 2)
3	1/19/21	Chapter 3	Formula Mass and the Mole Concept, Empirical Formula and Molecular Formula, Molarity and Other Units for Concentration	ORDER YOUR HOL KIT Conductivity(Report 3) https://www.youtube.com/watch?v=ABAqtFPfVos
	1/21/21	Chapter 4	Writing and Balancing Chemical Equations, Classifying Chemical Reactions	HOL1 Getting Started (Report 4)
4	1/26/21		**Exam 1**(Chapters 1-3)▪	Types of Reactions (Report 5)
	1/28/21	Chapter 4	Reaction Stoichiometry, Yields, Quantitative	Types of Reactions (Report 5)
5	2/2/21	Chapter 6	Thermochem: Internal energy, Calorimetry, Enthalpy	HOL2 Lab Lab Safety (Report 6)
	2/4/21		Thermochem: Calorimetry,Enthalpy Hess's Law	HOL3 Lab Techniques and Measurement (Report 7)
6	2/9/21	Chapter7▪	Radiation-Energy ,electromagnetic Waves, the Bohr Model	HOL4 The Mol/Hydrate (Report 8)
	2/11/21		**Exam 2 (C**hapter 4,6,7**)**	HOL4 Hydrate (Report 8)
7	2/16/21	Chapter 7	Radiation- Energy, Electromagnetic Waves, the Bohr Model	HOL5 Hess's Law (Report 9)
	2/18/21	Chapter 7	Quantum Theory, Quant # & sublevel-orbitals	HOL5 Hess's Law (Report 9)
8	2/23/21		**Exam 2**	HOL5 Hess's Law (Report 9)
	2/25/21	Chapter 8	Electron Configuration & Chem. Periodicity (Trends in Ionization Energies, Electronegativities	**Atomic Absorption and Emission** PhET Simulation Neon Lights and other Discharge Lamps (Report 10) :https://phet.colorado.edu/en/simulation/legacy/discharge-lamps
	2/26/21		Last day to drop classes with "W"	)
9	3/2/21	Chapter 8	Continue	HOL6 Titration of Acetic Acid and Vinegar (Report 11
	3/4/21	Chapter 9	Energies, Electronegativities	HOL6 Titration of Acetic Acid and Vinegar (Report 11)
10	3/9/21	Chapter10	Molecular Structure, VSEPR, Shape	Molecular Geometry (Report 12
	3/11/21	Chapter 10	**Exam 3**	Molecular Geometry (Report 12)
11	3/16/21	Chapter 10	VSEPR, Shape and polarity	Lab Final
	3/18/21	Chapter 11	Valence Bond Theory and Orbital Hybridization	
12	3/23/213	Final	Final	
	3/25/21			

Student Learning Outcome(s):

*Identify and explain trends in the periodic table.

*Construct balanced reaction equations and illustrate principles of stoichiometry.

*Apply the first law of thermodynamics to chemical reactions.