

Chemistry 1A -61 and 62 Course Outline

Spring 2020

INSTRUCTOR: Dr. Billie Lo lobillie@fhda.edu

Lecture: MW 6:00 – 7:15PM

Laboratory: Section 61: MW 2:30 – 5:20 PM Brendan Mar marbrendan@fhda.edu

Section 62: MW 7:30 – 10:20 PM Dr. Billie Lo

Office Hours: Saturdays 1-3 pm

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, 8th edition, 2017.

Free Connect Access Code from McCraw Hill 5JP7-F97M-IOR7-HMRP-U729 (Good for 90 days.)

“Connect” assignment for Chem 1A

Texbook:Martin Silberberg Title:Chemistry, Edition:8

Offer Name:Connect with LearnSmart for Silberberg: Chemistry, 8e

Offer Description:Connect (with eBook)

Quantity:1 each per enrolled student

Redemption Limit:246

Term: **90(Days)**

Reason :MHE COVID Response

The super code listed below>

5JP7-F97M-IOR7-HMRP-U729

Laboratory - Virtual Labs

Links are provided on Canvas for the Labster and Chem Collectives virtual labs. Additional labs are conducted as worksheets, details can be found on-line at <https://www.deanza.edu/chemistry/pdf/1A/Experiments> Click on the Experiments and download the details for each experiment.

Academic Dishonesty: Any form of academic dishonesty will be ground for dismissal from the course.

BASIS OF EVALUATION

A. Quizzes (Approx. 10 - 15 minutes):

Quizzes will be given at the beginning or end of class meetings to those students who are present at the time of quizzes. Pre-lectured reading materials may be covered at end of the lecture. No make-up quiz is given.

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 the 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

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 feed back or online tutoring when you make a mistake or need help. You are encouraged to use the "help" or "hint" on-line to save time.** The program is set to "auto-submit" on the due day. Doing it in a timely manner would help you understand the materials better, so that you can get better grades. Feel free to open the finished assignments for review because the final performance reports sum up your highest score for each chapter only. 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 lecture on the chapter is done. On completion of 70% of the total assigned homework you will get 50 **points** toward your over-all grades. Each chapter assignment is set to open for 2 to 3 weeks and you only need to finish 70% of the total to get full credit. Therefore, usually no extension will be granted to individual student.

An access code is required to do the "Connect:" homework. Due to Corvi-19, the publisher has generously provided free ACCESS Code (\$90 value) to all students on roll this quarter. The Connect homework is integrated in Canvas. Use the Super Code: **5JP7-F97M-IOR7-HMRP-U729** (Good for 90 days.)

E. Attendance:

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

F. Grading:

Lecture Grade: 70%

Exams	300
Quizzes	100 +
Connect home work**	50
Final exam	250

** You need to do 70% of the assigned online Connect assignment to get 50 points.

Lab Grade: 30%

Lab Midterm and Lab Final	140 points
Lab Reports	110
Lab Participation	50

Total	1000 points
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>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	4//27/20	5/4/20
2	Balance Equations	4, Expt. 9	6/3/20	6/10/20
3	Geometry (shape)	9,10,11	6/10/20	6/17/20

H. CHEMISTRY 1A TENTATIVE LECTURE AND EXAM SCHEDULE

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	CHEM 1A	LECTURE & EXAM SCHEDULE		LABORATORY SCHEDULE
WK	DATE	CHAPTER	LECTURE CONTENT	LABORATORY (Virtual Labs)
1	M 4/13/20	Chapter 1	Measurement, Units, Uncertainty, Precision and Accuracy, Scientific Notation	Orientation, Canvas, Connect Labster: Lab Safety, Chemistry Safety (Due 4/15)
	W 4/15/20	Chapter 1	Mathematical Treatment of Measurement Results, Atomic Theory, Atomic Structure	Scientific Notation and Unit Analysis Labster: Solution Preparation (Due 4/20)
2	M 4/20/20	Chapter 2	Chemical Formulas, the Periodic Table, Atomic Structure, Symbols, Nomenclature	Measurement and significant figures ChemCollective: Introduction (Due 4/22)
	W 4/22/20	Chapter 2	Continue	Chemical Nomenclature

		Chapter 3	Stoichiometry of Formula and Equations	Worksheet: Nomenclature (Due 4/27)
3	M 4/27/20	Chapter 3	Formula Mass and the Mole Concept, Empirical Formula and Molecular Formula, Molarity and Other Units for Concentration	Gravimetric Analysis Labster: Stoichiometry (Due 4/29)
	W 4/29/20	Chapter 4	Writing and Balancing Chemical Equat'ns, Classifying Chemical Reactions	Gravimetric Analysis ChemCollective: Unknown Silver Nitrate
4	M 5/4/20		<i>Exam 1</i>	Solutions Stoichiometry ChemCollective: Making Stock Solutions from Solids (Due 5/6)
	W 5/6/20	Chapter 4	Reaction Stoichiometry, Yields, Quantitative	Reaction Stoichiometry ChemCollective: Stoichiometry and Solution Preparation (Due 5/11)
5	M 5/11/20	Chapter 6	Thermochem: Internal energy, Calorimetry, Enthalpy	Types of Chemical Reactions ChemCollective: Exploring Oxidation-Reduction Reactions (Due 5/18) 6
	W 5/13/20	Chapter 6	Thermochemistry: Calorimetry, Enthalpy Hess's Law	Lab Midterm/ Finish Types of Chemical Reactions
6	M 5/18/20	Chapter 7's	Radiation- Energy, Electromagnetic Waves, the Bohr Model	Thermochemistry ChemCollective: Coffee Problem (Due 5/20)
	W 5/20/20		<i>Exam 2</i>	Thermochemistry Chemcollective: Hot/Cold Pack Parts 1 & 2 (Due 5/27)
7	M 5/25/20	Holiday-	Memorial Day	
	W 5/27/20	Chapter 7	Quantum Theory, Quant # & sublevel-orbitals	Electrolytes and Conductivity PhET Simulation: Sugar and Salt Solutions (Due 5/27)
8	M 6/1/20	Chapter 8	Electron Configuration & Chem. Periodicity (Trends in Ionization Energies, Electronegativities)	Atomic Absorption and Emission PhET Simulation: Neon Lights and other Discharge Lamps Worksheet: Line Spectra (Due 6/3)
	W 6/3/20	Chapter 8 Chapter 9	Continued Energies, Electronegativities	Acid-Base Titrations Labster: Titration – Neutralize an Acid Lake Contamination (Due 6/8)
	6/5/20	Last Day to	drop the class with a "W"	
9	M 6/8/20		<i>Exam 3</i>	Acid-Base Titrations ChemCollective: Determine the concentration of an Unknown HCl Solution (Due 6/15)
	W 6/10/20	Chapter 10	Molecular Structure, VSEPR Theory, Shape and Polarity,	Redox Titrations ChemCollective: Unknown HCl continued (Due 6/15)

10	M 6/15/20	Chapter 10	Continued	Molecular Geometries and VSEPR Worksheet and Visualizations: Molecular Geometries (Due 6/17)
	W 6/17/20	Chapter 11	Model of Chemical Bonding – Valence Bond Theory and Orbital Hybridization	Lab Final
11	M 6/22/19	Final Exam		

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.